LOUISIANA WILDLIFE AND FISHERIES COMMISSION

- - -:- - -

P R O C E E D I N G S

Monday, October 23, 1978

7:00 o'clock p.m.

DOYLE BERRY
Chairman

Municipal Auditorium
Lafayette, Louisiana

Pursuant to notice, the public hearing of the Louisiana Wildlife and Fisheries Commission convened at 7:00 p.m., on Monday, October 23, 1978, in the Municipal Auditorium, Lafayette, Louisiana, Doyle Berry, Chairman, presiding.

PRESENT WERE:

DOYLE BERRY, Chairman

DONALD F. WILLE, Vice Chairman

MARC DUPUY, Member

J. C. GILBERT, Member

JEAN LAPEYRE, Member

H. CLAY LUTTRELL, Member

CHARLES RIGGS, Member

J. BURTON ANGELLE, Secretary

CHAIRMAN DOYLE BERRY: I want to thank all of you present here tonight for coming to this public hearing. We are here tonight to get input on the steel shot issue and I ask that anyone who wishes to be heard tonight that when you come before the mike, please state your name and whom you represent.

DONALD F. WILLE: For anyone who has not registered and cares to, the registration is being conducted up front. If you wish to be heard, please fill out a card or slip here so that we will know to call on you. We would like you to

please, if you can, bear with us on this thing because we have a lot of people that want to be heard and we are going to ask you to try to limit your speaking time. If you are for or against, please give the most direct and decisive reasons for your position. We would like to hear it and we are taking notes on it. It will be recorded. We thank you.

CHAIRMAN DOYLE BERRY: Mr. Yancey.

RICHARD YANCEY: Thank you, Mr. Berry. I'm Richard Yancey. The purpose of this hearing tonight is for the Commission to hear what you have to say as to whether or not you feel this year's steel shot hunting regulations should be continued or whether they should be discontinued for the 1978-1979 season.

We received a wire from the Director of the U. S. Fish and Wildlife Service which states that unless the state approves the steel shot regulations for this year then they will not be enforced by the agents of the U. S. Fish and Wildlife Service. So, the alternatives the Commission has is to decide whether it wishes to rescind the steel shot regulations that have been previously prescribed for the state for the 1978-79 season or whether it wishes to go along with the request of the Director of the U. S. Fish and Wildlife Service that the Commission again reaffirm its approval of this year's steel shot regulations or whether the Commission wishes to take no action whatsoever in connection with the request of the Director of the U. S. Fish and Wildlife Service. So, therefore,

the purpose of the hearing is to hear what you have to say, present any statements you wish to make and then the Commission will make up its mind as to what action it will take at a meeting that will be held in Baton Rouge on Wednesday morning at 11:00 a.m.

CHAIRMAN DOYLE BERRY: Thank you, Mr. Yancey.

MR. J. BURTON ANGELLE: Good evening, ladies and gentlemen. I am Burt Angelle, Secretary of the Department of Wildlife and Fisheries.

I would like to introduce to you our Commission Members. Starting at my left next to Mr. Yancey is Mr. Marc Dupuy from Avoyelles Parish, town of Marksville. Next to him is Don Wille, presently serving as Vice Chairman of the Commission, from Bossier City. I'm going to skip over this little fellow for a minute. Over to my right is former State Senator and Representative and now serving on our Commission--Mr. Sonny Gilbert, from Sicily Island, Louisiana. Mr. H. Clay Luttrell, former Chairman of the Commission, from Buckeye, Louisiana. Mr. Jean Lapeyre, from Houma, Louisiana, and you spell it "H-o-u-m-a", and to my right, Mr. Charles Riggs, from Hackberry, Louisiana. Presently serving as our Chairman, Mr. Doyle Berry, from Berwick, Louisiana. These are the men we will be looking at on Wednesday, at 11:00 a.m., for making a decision as to where we are going on the steel shot versus lead shot issue. Thank you.

CHAIRMAN DOYLE BERRY: I would like to recognize some of

our guests here tonight. We have Representative Richard Thompson from Colfax, Louisiana. We have Representative Mike Hogan from southwest Louisiana. Senator Ned Randolph from Alexandria, Louisiana. Senator Knowles from southwest Louisiana. Senator Don Kelly from Natchitoches, Louisiana. We want to thank the State Representatives and Senators that are here with us tonight. Have we overlooked anyone? We also have Mr. Perry White, U. S. Fish and Wildlife Service, from Baton Rouge. Glad to see you, Perry.

Let me say this. I'm going to ask all of you to conduct yourselves as gentlemen. I'm sure you will. When a man is speaking let him have his say. Don't make any "boos" or any noises. Anyone wishing to be heard tonight, we will take time to hear you if we have to stay until daylight. The Commission will strictly be taking input and we are not asking any questions. We are here to listen to both sides and from this input we have to make up our own minds between now and 11 o'clock Wednesday morning on how we want to vote in this issue. So, I ask you please no catcalls, whistles, noises. Mr. Yancey.

MR. RICHARD YANCEY: Thank you, Mr. Berry. We have a program tonight divided into two parts. The first part, will be for informational purposes for everyone that is present here and will cover about 3 or 4 different topics. One will relate to the disease aspects associated with lead poisoning and just how lead poisoning works on waterfowl. This presentation will be made by Dr. Milton Friend. He is with the U. S. Fish and

Wildlife Service out of Madison, Wisconsin, and is the Director of the Wildlife Disease Program for the Fish and Wildlife Service in the United States. We have with us Bob Smith who is in charge of the steel shot program for the U. S. Fish and Wildlife Service. He will present for you information they have on the impacts of lead poisoning on the waterfowl resource along with some information on just how we got where we are now. Thirdly, we'll have with us Tom Roster who has been with the Oregon Institute of Technology. He is author of a great number of publications on ballistics, barrel damage and the effectiveness of steel shot in the hunting of waterfowl. And, lastly, we have Hugh Bateman, who is a waterfowl biologist for the Louisiana Department of Wildlife and Fisheries. He will provide for you information we have on the history and problems associated with lead poisoning in waterfowl here in Louisiana. To start this off, we have a ten-minute film that was made up by the U. S. Fish and Wildlife Service and it is entitled "A Closer Look." We would like to start with that ten-minute film and then we will have this panel of speakers make their presentations. We think these presentations are going to probably answer a lot of questions that many of you have in your minds. Following this informational portion of the program, the floor will be opened up for any statements or comments that anyone wishes to make and recommendations as to what actions you think the Commission should take in connection with the decision it is going to

make when it meets Wednesday morning. So, to begin with, Paul Jackson, one of the Wildlife Education Specialists for the Department will show this brief ten-minute film.

(FILM IS SHOWN)

MR. YANCEY: Thank you, Paul. Leading off in the panel of speakers, is Dr. Milton Friend and, as I said earlier, he is Director of the wildlife disease branch of the U. S. Fish and Wildlife Service out of Madison, Wisconsin. He has some slides to show and some information to give to you which I think will help clear up some of the questions relative to lead poisoning and the disease implications of the problem. Dr. Friend.

DR. MILTON FRIEND: I'm glad to be here and will try to share some of our experiences with you about this problem. I'd like to mention that a little bit of what I was going to say is in the movie here and I'll just elaborate on those points. What I hope to do is just provide you with some basic information that may formulate some questions for you later. I would be glad to respond to those at the end of the session. If I could have the lights off, I'll go right into the slides. I would like to as I start indicate what our laboratory is all about.

The National Fish and Wildlife Health Lab was put together in 1975 to provide the service with a means of assessing wildlife mortality and helping to reduce the losses that we don't have to endure. Most of the work we do is with migratory birds. We serve the entire United States and we are not local in terms

of just Wisconsin. Our problems are varied but the thing we have seen most since we have been in operation is lead poisoning as a constant problem across the country appearing in very significant numbers of waterfowl year after year.

Now I'll try to touch quickly on things that we see. This is lead poisoning and this is what it looks like. I throw in a few of these slides because I always get this question. Duck hunters will say "what does it look like in the field." The hatchet breast is one of the things we most often see when a bird is very severely debilitated. The birds have a great reluctance to fly. You can approach them quite closely. If the bird does become air borne, it may fly 50 yds., 100 yds., and sits down. These birds very often are mistaken for crippled birds. We have collected a number of such birds and in almost all cases they are lead poisoning victims. In fact, we have had a study going on in Horicon National Wildlife Refuge for the last three years. We have been looking at so-called "crippling loss" and we are finding out that about 25 per cent of the "crippling loss" is in effect lead poisoning on an area where lead poisoning was really not known to exist. Some of these swans were in the movie. This was taken in the same location. The wing droop and very often you will see mild staining of the vent. You really don't have to have the birds in hand. In northern climates when you have an outbreak you can identify lead poisoning areas just by the stained feces that are laying all over the ice. Now, when we open a bird

and try to determine what the lesions are. The bird on the bottom, you see, has a lot of fat. The yellow coloration of the skin. It's a bird that happened to die maybe due to cholera. The bird on the top, you see, is very poor. It's totally devoid of subcutaneous fat. The reason for this is lead poisoning. It tends to be a chronic, wasting disease and that causes us some of the problems that I will touch on in a minute or so. Opening the bird up, one often sees an enlarged gall bladder, that green thing right in the middle inside the gizzard, and when you look at the gizzard you will find that the gizzard pad is green stained and you may or may not see lead shot there. Paralysis is also very common and what happens is that lead salts get into the system and you get paralysis of the gizzard. The muscles don't work any more so food doesn't pass. The bird is hungry since nothing is passing into the intestines. He is not getting any nutrients but keeps eating and since the gizzard isn't grinding his food down and passing the food, it tends to back up. Here you see the action of corn on a mallard. It's going all the way to the gizzard and then back up to the bill. Here's one on the swan, one on the snow goose. They come in a variety of species and a variety of consistency in terms of what is in there. You may or may not find lead shot in the gizzard. The finding of lead shot in the gizzard is not necessarily diagnostic. The absence of it in the gizzard is not diagnostic. The reason for this is that lead shot doesn't cause a problem until it is ground down.

But once it is ground down, it's changed into lead salts which gets into the bird's blood and is carried into other parts of the body. Now these pellets are very hard to find. They are flat, they are very thin wafers. They are very small in size. It's when they get to this form that they cause problems for the bird. Now, most, I'll say any trained waterfowl biologist can make a pretty good evaluation in the field. He is going to be 95% certain that in fact he has a lead poisoning case. Using these kind of factors and his experience in dealing with birds, normal birds, and birds that have died from other types of conditions. We always like for birds to come into the laboratory to run blood analysis on the liver and the blood to determine if in fact this is a lead poisoning case based on what we see clinically. This is what happens to the bird when it goes through lead poisoning. What I've done is bring together the information and boil it down into a typical bird. I understand this is a typical ideal case. The bird ingests the lead shot while he is feeding on the first day. It takes a few days for the gizzard to grind down this lead shot and for the lead to be transformed into lead salts which get into the blood. The maximum concentration of this lead now gets into the blood and is carried to places where it's going to do the damage--about 3 to 10 days. So, during the first week now we start to get this paralysis of the digestive tract and those actions that I showed you start to take place. The bird becomes depressed and doesn't feel very well. He withdraws from the rest and

this is one of the problems in terms of detecting lead poisoning in the field. The type of situation that you saw earlier in the movie with lots of dead birds lying all over the place is not usual circumstance. The problem with lead poisoning is that it is a chronic disease. You lose a few birds today, a few birds tomorrow, and this continues throughout the hunting season. It tends to build up the longer you are into the season. So, you lose these birds because they do seek seclusion. They withdraw; they are picked off by predators. They die and they are consumed by scavengers. The bird loses its power of flight in about two weeks and then goes through this rapid deterioration of the breast muscles and eventually will die in about three weeks.

Now this is the situation that most people, I think, have in their minds. This is a natural lead poisoning die-off of snow geese in South Dakota. This started out as a lead poisoning die-off abd it ended up as a cholera die-off. I'll touch on that in a minute. The situation here in hand is typical. This is a usual situation. We could have a single bird to die today, two tomorrow and so forth. Let's go back to this situation. When you see this kind of situation in the field, be it lead poisoning or something else, you may think you have a hundred dead birds out there. You go and count them and you find that you have a thousand dead birds out there.

Generally, we are working on the factor of 10 to 1 and we pretty much are on target on all of this. This particular die-off started out as lead poisoning. Three different labs

were involved here--South Dakota State, our lab and another lab. All came up with the same conclusion. Lead poisoning was in all samples that were sent in. We wondered about this situation in the field as we were cleaning up. The situation changed very quickly from a 100 per cent lead poisoning die-off to a mixed problem, maybe cholera and lead poisoning. It ended up as a cholera problem.

The point I want to make here is that you have an interaction situation that goes beyond the directive path of lead poisoning. Lead does cause other types of disease problems. This is aspergillosis in Canada goose. This is a very common cause of mortality that we see in Wisconsin in lead-poisoned birds. This is a disease that ordinarily doesn't effect birds. At least it doesn't kill birds except when they get into moldy grain. But, we see this very often with lead poisoned birds because of the debilitated state of the birds. Maybe cholera is another situation where we have seen a number of cases in the field with die-offs that started off as lead poisoning and then you get into the infectious disease process that escalates very rapidly because of the contagiousness of the disease. Now the other aspect, of course, of infectious disease is if my pet Labador can get out there and catch these birds. It's easy prey to get a fox or anything else to pick them off. We'll go in and work some of these areas after the hunting seasons and we'll virtually fill a truck in a couple of hours working with the dogs. We've run these birds through fluoroscope, the

killed birds, and examined them.

In all cases we are running into lead poisoning die-offs after the season where they are not easily detected. In terms of the total scope of things the losses are very great. These are the losses that have been projected. I think they are probably very realistic. What that means to you here in the Mississippi Flyway. These are figures of Dr. Bellrose who is a pioneer in this field. Based on 1960 mallard population data, he came up with an annual loss of 630,000 mallards per year.

I feel we can significantly reduce this loss by switching away from lead and going to steel. Really, the decision is in your hands. We are only here to try and report to you what we see in the field. Thank you.

MR. YANCEY: Thank you very much, Dr. Friend. Our next speaker is Robert Smith. Bob is the Director of the steel shot program for the U. S. Fish and Wildlife Service and he is headquartered in Washington. I know of no other individual in the wildlife field in the United States at this time that has had more scars imposed upon his skin in the last three or four years than Bob has. He is thoroughly familiar with how this steel shot program developed and what the lead poisoning problem is in the nation. His topic will involve the impacts of lead poisoning on the North American waterfowl resource and how we got where we are at this time. Bob.

DR. ROBERT SMITH: Thank you. I am going to give you a little history on this. It has a long and rather complicated

history and I am going to try to make it as brief as possible. But, I think a little history is in order here.

Mention was made of the study by Frank Bellrose. Perhaps that is a good starting point. This was work done in the 1950's by the Illinois Natural History Survey and involved essentially a study of about 40,000 gizzards collected throughout the United States, about 100 dosing experiments with captive birds, a dosing experiment with wild mallards and releasing wild mallards that had been dosed with lead pellets. As indicated in the slides, the results indicated about 5% of the mallards in the Mississippi Flyway come down with lead poisoning each year. The Bellrose study also indicated about 25 or 30% of the birds, mallards from the Mississippi Flyway, eat at least one lead pellet each year. Following that study, which was in 1959, there was an effort to determine what sort of non-toxic shot could be developed to replace lead and this went on for about five years. It was conducted by the Illinois Institute of Technology and the results of that work indicated that steel shot was probably the best substitute for lead. About 1968 some shooting tests were conducted cooperatively between the service and industry. About 2,000 mallards were shot at various ranges with an ounce of steel and an ounce and one-quarter of lead and the lead was slightly more lethal than the steel but the differences were very slight. For example, at 40 yds. steel, the ounce of steel, bagged 71% of the birds and the ounce and a quarter of lead bagged 75% of the birds,

I believe. There was no indication that there was a difference in crippling loss; however, these were birds that were tethered and the patterns were centered so it was not a very good test for field performance. But, the effectiveness of steel was surprisingly good considering the difference in weights. The early ballastics tests were very promising in terms of steel as an alternative. About 1970, a committee was set up to explore steel as the adjunctive choice and this was a joint committee composed of fish and wildlife service people, state representatives and industry people. This committee, one of the first things they requested was additional research on lead poisoning to determine if the work done by Bellrose earlier, the Illinois Natural History survey, represent the conditions as they exist today. So, this is about where I became involved in it. We conducted some experiments and began to collect more gizzards. This is about 1970. We examined about 60,000 gizzards that we collected. About 60,000 additional gizzards. In addition to this, wings from ducks were collected from throughout the United States in '72 and '73 to determine the amount of lead that was deposited in those bones because lead is not deposited in muscle tissue it goes into the blood and it then goes into the liver. From the liver it goes into the bone. Bone is one of the places where it is stored. So we selected the bone to examine how much lead was actually going into the bodies of these birds, the tissues, and comparing these gizzard collections of the 70's with the gizzard

collections earlier and bone samples that we looked at in the 70's. It became apparent that the situation ascribed by the earlier studies were essentially correct. There was some question whether the lead in the bones came from the feeding on lead pellets or came from some other source. Of course, the resulting studies indicated very clearly that the lead in the bones were elevated.

The high levels in the bones were coming from feeding on lead shot. There was no question about that so the problem did not seem to be much worse. In fact, we found, I think, in earlier studies in the Mississippi Flyway. If you will look at the mallard bag you will find that about 7% of the mallards that are bagged each year have one or more shot in the gizzard at the time they are bagged. I looked at the average of all the mallards collected in the last five years just the other day and I think 8% of them had shot in their gizzards. So, the problem doesn't seem to be getting worse--it just stays there. It is always there. We have fewer birds now than we had in the 50's. There are fewer mallards now than there were in the 50's, several million fewer mallards. So, you can say that the problem stays the same but the ducks in flight are not as abundant and in the case of mallards, pintails, black ducks, canvas backs that is certainly true. In about 1974, another point I want to make on this, one of the things that we did learn from the wing bone study is that as the additional 50,000 or 60,000 gizzards were collected is that

this problem seems to exist to some degree everywhere we looked. I was surprised at this. There are some areas where it is much more serious than other areas. But, I am really kind of shocked at the general nature of the thing throughout the United States. Shot are being picked up everywhere. Lead in the bone is almost everywhere. We did find portions of the central plains region where the eating of lead pellets occurs at a much more lower rate and the incidence of lead in the bone and the tissues of the birds are lower. But, even there you have the problem; it's just a matter of degree. In 1974, the Fish and Wildlife Service proposed for public comment that the steel shot be applied throughout the Mississippi Flyway in 1977, throughout the Atlantic Flyway in 1976. The public comment on this indicated that the Flyway Council, the states, the majority of the states, preferred to do this by voting. They preferred a process whereby the areas that are more serious to be identified and those converted to steel shot. So, in January 1976, a final decision was made to do it this way. To try to phase steel shot in, in zones where the largest quantities of lead shot were being used. Now at that time we didn't have all the gizzard information that we needed so we used in those first two years, the amount of lead shot being deposited which was a measure of that we did have. We used what other information we could find. In some cases we had gizzard information, in some cases we had pretty good information on

actually how many birds were dying in a particular location. But, this is very difficult to estimate and always will be. I don't know if we will ever have really good estimates of how many birds are dying in each location. We just don't have the technology or the techniques to do that. This year, in 1978, we moved all the way across the United States and we are using primarily the amount of shot being found in gizzards as the major method to determine where the regulation should be located. This year the zones throughout the United States made up about 22 per cent of the traditional waterfowl harvest area. This will give you some idea of the size of these zones nationally. I don't know if anyone else has covered, well, I think Mr. Yancey has covered the action by the Congress in relation to each state's approval requirement which is why we are here. So, I think that is the most recent history and you are aware of that. I would make one other point and I think I will perhaps sit down and let others speak.

The areas where we have used steel shot over a fairly large zone and a high percentage of the hunters have used steel shot it is remarkable, really, the rate in which steel has replaced lead shot in gizzards of these birds. A state-wide sample in Michigan this last fall, about 4,000 gizzards, 16% of the shot in those gizzards were steel shot. Samples from a migrational area, like Illinois, of about 400 mallard gizzards there, from 3 or 4 counties, 9% of those mallards had shot in their gizzards, 6% of those mallards had steel shot.

In other words, two-thirds of those gizzards had steel shot. So, this indicates two things: one, the shot being eaten by ducks and geese is shot that is currently being deposited. We see that from other studies. So far, in most areas, it appears that the problem can be overcome rather quickly in a matter of two or three years if steel shot is used. That's all. Thank you.

MR. YANCEY: Thank you, Bob. Our next speaker is Tom Roster and he will have some information for you that has been one of the major concerns in connection with this entire program. It relates to the actual use of steel shot and what impact this has on barrels of shotguns through which steel shot is fired, two, the crippling loss in the use of steel as compared to lead and also the ballistics and the effectiveness of using steel shot rather than lead in the hunting of waterfowl. Tom.

MR. TOM ROSTER: It is almost impossible for me to give you any kind of information thoroughly and convincingly in such a manner that you can really understand it on something as complicated as ballistics of steel and lead in ten minutes. So, what I am going to do is to attempt to boil down all the complications into a set of conclusions and I don't expect you to buy or even accept those conclusions. What I hope you will do when we are all done with giving our speeches, whomever has to follow me, that the audience will ask me numerous and detailed questions about the ballistics and about anything

which I haven't covered thoroughly. I think through those questions that more will come to light than anything I can possibly do in just a ten-minute presentation.

The full issue of steel versus lead shot strikes me as a very odd issue. As a person that has worked with shot shell ballistics research for several years now, I really could care less if one has to shoot lead, steel or plastic. My job is simply to find out if one has to shoot a given metal type, how does it work? That's all I would really like to do here is say, this appears to be an area in which you have to shoot steel shot. If somebody is going to make a decision as to whether you have to continue shooting steel and my job is simply to provide you information, I hope, that you can use it intelligently and use it effectively.

The literature that hunters read in outdoor magazines, etc., for which I write is filled with articles over the last few years that steel is inherently and essentially inferior to lead shot because it is only 68% as heavy as lead shot. The literature tells us that because it is lighter it is necessarily poor. That argument strikes me as similar to the person who is recruiting people for a basketball team and he has two 7 ft. candidates and two 6 ft. 11 in. candidates and because the two are slightly shorter than the other, they are necessarily poorer basketball players. My thought on that is that yes, it is true, steel is only 68% as heavy as lead. Maybe it is true, therefore, that it might not perform as well as lead because it

is not as dense and does not contain energy as well. I think that to boil that very complicated issue down, one can simply say this--if you take a steel projectile of the same size as a lead projectile and you drive it at the same velocity as the lead projectile, the steel projectile will always be inferior to the lead projectile. That is an inescapable situation in terms of retaining energy, in terms of retaining velocity over distance. Now, if we were forced to use the same size of steel driven at the same speed as we do when we choose lead shot for hunting waterfowl, I would say we would be in trouble. The fact remains that there is no law, there is no constraint which says that steel must go only as fast as lead and that you must use the same shot size as when hunting with lead. If one can accept that fact that you have an option to use different sizes in steel and different velocity levels than you have used in lead, then an entirely different picture emerges. So, to boil that complicated issue down, the ballistics of the two projectile types work out very nicely like this. If I take a steel projectile which is two sizes larger than a lead projectile, if I drive that steel projectile at a velocity level which is at least 100 ft. per second faster at the muzzle than a lead projectile, then the ballistics of the steel projectile are almost identical to the ballistics of the lead projectile. There is no difference. In other words, a No. 2 steel shot driven at 100 ft. per second faster than a No. 4 lead shot retains the same amount of energy over distance,

loses velocity very similar over distance as that No. 4 lead projectile.

For all intents and purposes, a steel projectile driven 100 ft. per second faster and being two sizes larger, is the same thing ballistically as a lead projectile. If I was in an area where I had to shoot steel shot and I wanted the same performance from the steel shot as I got in lead and I bought the same shot size, if I bought a steel shell at the same velocity level as my lead ammunition, I would expect poorer results. If I were willing to buy a two sizes larger shot size at a faster velocity level, I would expect very similar results.

Now that theory is essentially what you have read in magazines--the theory of how the two work. Well, to counterbalance the performance of the two projectile types in the field. At this time the only work that has been done on preparing ballistics on the effectiveness of bagging waterfowl in the field have been field tests on ducks. There was a test on ducks in Michigan in 1973 at Shiawasee. The Fish and Wildlife Service was conducting steel shot versus lead shot shooting tests with the hunter public participating in doing the shooting in 1973, 1974 and 1975. Just last year in Illinois, a steel versus lead shot field shooting test was conducted on geese. The results of all those field tests have been the same, that is, there was no significant difference in bagging and crippling rates of lead versus steel shot. In fact, in the Illinois tests, the hunters actually produced a lower crippling rate with steel than they did with lead.

The second thing that is interesting to consider about the ballistics of steel shot is that it is a very difficult projectile type to shoot and this, I think, is the core or the root of a lot of hunter problems in the use of steel shot. Steel shot is not only lighter than lead and that seems to be a problem, but it has one advantage over lead which lead will never be able to come up to and that is steel is made by a different process. It's made in a mold, to boil it all down. All steel pellets are made essentially very truly sperical. Steel shot is so much harder than lead that steel shot is not deformed as it passes down the barrel nor as it strikes the target medium. Steel starts out round and remains round. Lead is not round to begin with.

We can look at some slides later on of enlargements of the two projectile types and it deforms as it passes down the barrel due to various factors. Because steel is round it stays round and has a very nice ballistic advantage because it patterns much better than lead shot. One must struggle with all sorts of concepts using granulated plastic as a filler, using contour plating on lead, using a very hard lead projectile to get lead to come even close to the pattering abilities inherent in steel shot.

This higher patterning value for steel means that even though one has to go up two pellet sizes to get the same retained energy over distance, the patterns work out that the patterns with the load of No. 2 steel versus an equivalent

volume of No. 4 lead, the steel actually produces similar strikes on the target because of its increased patterning value. Now that is a very complicated thing which I have boiled down. We can look at slides later on if you would like to see those. We actually look at some values. However, because it does pattern better, the steel shot, it's very difficult to strike the target with it. Most hunters, at least in my research, carry into the field full choke barrels. Using a full choke barrel in shooting steel is an immediate handicap for most people. It's very difficult to strike ducks or geese coming into decoys with a load of steel shot which, incidentally, tends to pattern at 40 yds., about 82%. I'm talking about lead now which tends to pattern maybe 70% on the average. It is very difficult to strike the target medium because of this pattern. Secondly, because these pellets are steel, none of them are deformed. They do not start out deformed, nor do they end up being deformed and we get another ballistic benefit.

The other ballastic benefit is the much shorter shot string. In pattern test you will only see the pattern in two dimensions, width and height of pattern. You will not see the stringing effect. The stringing of steel because it is not deformed and is approximately at all distances about only one-third the length of lead shot string. That means that it is much more difficult if a bird is crossing at an angle to that shot string to strike the target with steel

than it is to strike the target with lead so that in most areas where people initially start shooting steel shot there are many complaints. The complaints are about crippling losses which we will get into. What they basically boil down to really, when one examines it, is problems in striking the target. Initially, hunters with their full chokes using steel have a great deal of difficulty in hitting the target. The second factor is that most steel loads are faster than lead loads. Hunters have to learn to readjust their loads just for the velocity. Use of steel shot for the average shooter is a difficult thing to do.

When one looks at how hunters perform with steel versus lead after they gain experience, though, after they learn to use it, you don't see the difficulty in striking the target medium. They are out there now using a few cylinders, chokes, they have learned to adjust their loads, they are much happier.

Let's talk very briefly about changes in steel shot loads. Most of the literature which talks about barrel damage, which talks about ballastics, is based upon the very first field shot loads which were made. The first steel shot loads were much different than steel shot loads which are now available or are becoming available to the public. The steel shot load development scene is a very dynamic scene which is literally being changed every few months. You buy a box of shells and two months from now that may be much different from what you bought three months ago. The steel loads which were initially used

were the root of most barrel damage; they were much harder. The steel had a much higher DPH, Diamond Pure Hardness, than the steel that is now being loaded in steel shotgun shells. Secondly, the steel loads that are now being used contain wads which preclude, which prevent, the shot from contacting the barrel. Primitive or the earlier steel loads did not have shot containers which totally prevented the steel from contacting the barrel and, therefore, you had the chance for the steel shot to literally rub on the steel of the barrel. As anybody knows anytime you have steel rubbing on steel something has to erode.

There were barrel erosion and shell erosion problems. Choking erosion, the rubbing away of the metal itself from the interior of the barrel has now been virtually eliminated in current recent steel shot ammunition. The only problem which we will get into in a second is that one may still have in terms of damage from steel is rainvulching of certain chokes in certain guides. We'll save that for a few minutes from now.

The second thing about steel shot ammunition is the manufacturers, as they work up the ballistics of the new metal type, are increasing the velocity level of the steel shot ammunition. Early steel shot ammunition had velocity levels equivalent to but seldom if ever higher than available lead shot ammunition. This has changed with the exception of Winchester Western which still makes the slower steel loads available on the market. Remington and Federal have steel shot ammunition which is significantly, most of it, not all, faster than currently available

lead shot ammunition offered. These are the three most important changes in the steel shot ammunition. The fourth change which is contaminant with the development of new loads is the use of softer steel. Understanding a little better how to load it is even more important to the pattern and performance from steel shot ammunition.

Another problem which I think has come out of the steel shot and lead shot issue, I'll touch on it briefly, is barrel damage. I talked about erosion now let me talk for a second about ring bulge parameters. Initially in the literature one was lead to believe that if one shot steel shot in his gun that at the end of the shooting season or the end of the day one would have a bulged barrel or separated barrels in his gun. This is the impression of a lot of hunters--this will ruin my gun. The fact remains that other than where people have loads stuck in their barrel and fired another round which caused a significant bulge or blown barrel which happens with lead all the time.

The only problem now is ring bulging in the choke. Ring bulging is still possible, I would say, in a very limited, small percentage of guns. The kinds of guns which are subjected to ring-bulging would be Brownings of certain manufacturers, various light-weight side-by-sides, and other over-and-unders. The light weight coming from the fact that the steel on the barrels is usually thinner than in heavier guns. It is interesting to note that these cases comprised a very small percentage like probably 8 per cent or less of all the guns in this country.

But even in those cases, the ring-bulging is something which happens and then it stabilizes. What is a ring bulge? A ring bulge is normally a bulge which you can see in the exterior of the barrel in the vicinity of the choke. It could be right at the end of the barrel or as much as three inches behind the end of the barrel. It's probably two-thousandths or three-thousandths of an inch thick at the most. Now a sheet of paper, depending on the sheet of paper you are using is something which is about a thousandth of an inch thick if it's lucky. So you are talking about a bulge that is as thick as two sheets of paper that's stuck together. Ring-bulging is not limited to steel shot. Ring-bulging is caused not only by steel shot but magnum lead loads. For example, those of you who may worry about barrel damage, go home and look at your 20 gauge. I doubt that anybody has ever in this room fired steel shot through your 20 gauge. If you have a three inch, 20 gauge, and you fired an ounce and a quarter of 3 in. steel shot ammunition, you may be very surprised when you get home and look at the exterior of the barrel. If you look down the barrel very carefully you may see a very slight ring bulge on the outside of the barrel which is not caused by steel shot but was caused by lead. If you have a two and three-quarter inch 12 gauge gun and you have been shooting an ounce and a half lead load through it, particularly if it's one of those treasured light doubles and you have never shot steel, look down at the end of the barrel. I've done this with other audiences and I've had as many as 5 or 10 people come out of the

audience later on and we looked at their guns and sure enough there was a ring-bulge and they had never shot steel shot. If you remember correctly, years ago the ounce and a half lead loads were 1350 ft. per second loads. They are now 12 - 60 ft. per second loads. The reason for that reduction is the manufacturers attempts to reduce ring-bulging but it's never been eliminated. Once you get this bulge the patterning performance of the gun is not changed. The life of the gun is not changed. The bulge does not continue to expand. Whatever you have after a few shots is all you are ever going to get. It's something, if you want to look very closely down the barrel in the right light conditions, you may see that it is not a very obvious thing. It is not an ugly thing at the end of the barrel. It's merely a cosmetic change.

The last, I think, is a real problem with steel shot at this time and that is the cost of steel shot. I'm very disgusted with the cost of steel shot. I think the American public in many respects is being exploited. I do not think it is the manufacturers who are doing this. The prices which were quoted to me in this area for steel shot ammunition varies from $6.50 per box to $11.50 a box. Now I personally know from developing reloading data for steel shot which is not yet available to the public. If I reload one ounce and one-eighth steel 12 gauge load and buy all the components of the shell at the maximum retail prices, the maximum cost to me for reloading that box of steel is $3.00.

When I go into a store and after paying in excess of $6.50 for the same thing I have to ask the question, "Why am I being charged this kind of a price?" The cheapest I have ever seen steel sold was in Wisconsin for $5.67 a box. I will simply say this that steel is more expensive to make right now than is lead because of the molding process.

Let's eliminate discussion of lead poisoning; let's eliminate discussions of the current cost of steel shot. The fact remains that if we had not been interested in steel at all because of lead poisoning, talk would have come about here in the next few years to eliminate the cost of lead--to decrease the cost of lead shot. Lead continues to skyrocket the cost. Antimony added to lead to make it hotter is skyrocketing the price at an even faster rate. Five, six, seven years from now the cost of lead will easily exceed the cost of steel. I am not comfortable with the cost of steel at this time. Lead will continue to increase in price and it is an unavoidable reality of the lead market. Steel will continue to be the most readily available and cheapest available metal compared to lead. That cost picture will stabilize. If one is confronted with purchasing steel shot ammunition, let's say for example, the ounce of lead load. In this case, $7.50. I would be very concerned about what kind of profit the person is making in selling that shell to the public. This is not the cost, the very high cost which people run into. It's not, in other words, it is not inherent in steel shot itself. It is inherent somehow in the

handing out from the manufacturer to the dealer to jobber to wholesaler to retailer. Somehow the price goes from the practical to the ridiculous in some places to the sublime in terms of what the public is paying for steel shot.

Well, those are the four points which I wanted to touch on and I hope that when you have time that you will be able to ask questions. I have slides which I can show demonstrating pattern performance, penetration on birds, etc. Thank you.

MR. RICHARD YANCEY: Thank you, Tom. Our final speaker and coming closer to home here will be Hugh Bateman, Biologist for the Louisiana Department of Wildlife and Fisheries. His subject will be the impacts of and extent of lead poisoning in waterfowl in Louisiana. Hugh.

MR. HUGH BATEMAN: Thank you, Mr. Yancey. What I would like to do is go through a series of slides. I'll do it as quickly as I can to not belabor what we have gone through so far. I think I have some slides which will be of interest to those of you here. If I could go ahead and have the lights dimmed maybe a little bit.

Of course, Louisiana is at the bottom of the flyways here in North America. It is an extremely important wintering and harvest area for waterfowl which come down both the Central and Mississippi Flyways. We have tremendous numbers of geese and ducks that winter here in the State. In excess of a half-million geese and in most years, four to six million ducks. As a result of that, obviously, we have the highest interest in waterfowl

hunting in this state of any state in the United States. Now, it is a recreational sport enjoyed by about 125,000 people in this state on an annual basis. The variety of birds taken by hunters here ranges from mallards all the way down to lesser scaup in species important to hunters. The annual duck harvest in Louisiana ranges upward of one million birds. The majority of these birds are taken on the coast but there are individually important hunting areas to the north. Northeast Louisiana agricultural fields are extremely important at certain times of the year. Catahoula Lake, and other places. This map illustrates the two steel shot zones that went into effect last year and have been registered to be in effect for this coming year.

This slide will give you an idea of how much lead is being put into the wetlands of this state on an annual basis by waterfowl hunting because of the intensity of the hunting pressure that occurs here and also this, of course, is the result of the millions of birds that are here.

We figure the average load is an ounce and a quarter of No. 6 lead shot containing 281 pellets. The number of rounds fired per bird we estimate to be about six. This is on a national average. The average annual waterfowl harvest is about two million birds, so that's twelve million rounds fired. The result is that there are 3.4 billion pellets, that's 468 tons of lead that are put into Louisiana's wetlands on an annual basis as a result of waterfowl hunting.

This next slide will simply illustrate to you the

documented lead poisoning die-offs that have occurred here in Louisiana. These don't necessarily represent all the die-offs that have occurred. These are ones that have involved several hundred to over ten thousand birds at one location. Dating back to 1925, these are occurrences that have been verified in the field by technical people and also have been verified by tissue samples from dead birds that were examined by trained veterinarians at L.S.U. Veterinary School and the U.S. Fish and Wildlife Service.

The two areas in red there are noteworthy for good reason. They generally prescribe, I think, the two areas where lead poisoning problems, we think, have been most severe in the state. You can see at Catahoula Lake in 1930, 1951, 1953, and so on through this past year when in our judgement severe outbreaks of lead poisoning have occurred. Catahoula Lake is in Central Louisiana. It is 26,000 acres and extremely shallow. We estimate that most years there are over a thousand duck blinds on the lake. Extremely large numbers of birds winter there. Over a quarter million birds--scaups, mainly mallards and pintails. At times it is unbelievable the concentration of birds that we have there.

The water levels there range from almost zero up to about 3 to 4 ft. in the channels when the water is at its optimum depth. The water you are looking at here where you see the concentration of birds at Catahoula Lake is about one to two inches deep. The soils are extremely firm. Hunting success is

extremely good at certain times when the birds are concentrated on the lake.

This slide will give you an idea of lead deposition on Catahoula Lake on an annual basis. Here again the average load is an ounce and a quarter of No. 6 lead shot and the number of rounds fired per bird bagged is about five. The annual waterfowl harvest on the lake is around twenty-five thousand birds, this results in 125,000 rounds being fired. This puts about 35 million pellets, or over 4 tons of lead on Catahoula Lake each year.

This is a picture of a lead-sick bird that was picked up at Catahoula Lake in 1976 prior to the opening of the duck season. There were 23 ingested lead pellets in the gizzard of this bird. The lead poisoning die-offs that have occurred here at times involve over 10,000 birds at one time. This past year I visited the lake during the waterfowl season and in about an hour trip in an airboat on the lake, we picked up over 40 dead birds which were confirmed lead poisoning victims. The birds involved were pintails, canvasback, mallards, lesser scaup, and an occasional teal. Because Catahoula Lake is so important in the state as a wintering area, and to hunters, the Department has done extensive research on the lake in regard to the lead poisoning problem and lead deposition. We have sampled the soils on Catahoula Lake to determine what the rate of lead deposition is on a per acre basis. You can see when the lake is dry, the sampler has to be driven into the ground with a heavy implement. These soil

samples are washed through screens and the lead shot are then recovered.

This slide simply illustrates the number of pellets found around some of the older blinds on Catahoula Lake. They have been hunted since back in early 1900's. Over a hundred thousand pellets per acre in the top eight inches of the soil. Over the lake as a whole, over the entire twenty-six thousand acres, there is an average of nearly thirty thousand pellets per acre in the top eight inches of the soil.

One of the other things we have done at Catahoula Lake to determine the extent of the lead poisoning problem is to contact hunters. They have volunteered to give us gizzards from some of the birds that they have harvested. The gizzards were removed from the birds and opened and examined for ingested lead. The point has already been made in previous comments that some of this lead is extremely difficult to find. It's been ground down to very small wafers and must be examined in a white tray under a light to be found.

This slide here will illustrate some of the lead that we removed from birds that were killed by hunters last year. The top row of shot is recently ingested lead which is almost the same size as it comes out the gun barrel. It varies from that down to about half size and then in the bottom picture, you are looking at little tiny wafers about the size of the point of a lead pencil. It's extremely difficult to see, especially when mixed in with the food contents that are in the gizzard. You

have to wash this stuff down very carefully and examine it under intense light to see these particles.

Well, the results of this work that we have done in collecting gizzards on Catahoula Lake has resulted in the following figures. From 490 mallard gizzards examined, 166 of them had ingested lead for 34 per cent. I think you should remember some of the figures that were already given to you involving other areas in the United States concerning ingested lead. Unfortunately, we are finding here in particular with mallards that it's running anywhere from two to three times the rate that was found in other states. Pintails around 11 per cent, ring-neck ducks--9 per cent, lesser scaup about 28 per cent. These were from birds shot by hunters during the duck season at various times.

The other problem area that I would like to discuss a little bit is southwest Louisiana, particularly the rice fields. Here again this slide, if you will look at the number of occurrences of documented lead poisoning outbreaks you will see a great many of them have occurred in rice fields. Lacassine National Wildlife Refuge has been an area where lead-sick birds have accumulated, not necessarily because they are picking up lead shot right there but these birds are feeding out north of the Refuge into the rice fields. They are picking up lead at those locations and then moving back to the Refuge where they remain for protection and for rest. As a result, lead-sick birds accumulate at the Refuge. In 1973, we estimated over three

thousand snow geese died at Lacassine National Wildlife Refuge. Birds from that die-off were found as far away as Sabine National Wildlife Refuge and as far south as Rockefeller Refuge. We picked up a number of these sick geese with dogs and examined the gizzards from these birds and in every case we found ingested lead in the gizzard which indicated, obviously, lead poisoning.

To back up field techniques, we sent tissues of birds to the lab at LSU and they have been examined. The vets told us that lethal amounts of lead were carried in the tissues of these birds. These outbreaks this past year in 1977 were confirmed by both looking in the field and in sending tissue samples to the lab.

Soil sampling is the other thing we have done in the rice fields to get an idea of what kind of problem we are dealing with and the extent of lead available in rice fields. We have examined a rice field blind after the hunting season was over and took random soil samples one foot square, four inches deep. Here again these samples were returned to the laboratory and washed out through a series of screens and any lead shot available there was recovered and documented.

One rice field reservoir was examined by a graduate student at LSU in 1975 through a research program. He found that at Avery Island canvasbacks were dying on a single 119 acre reservoir. In 1975 he took soil samples from the bottom of that reservoir, and he found that on the average 180,000 lead pellets per acre on the bottom of this reservoir. These pellets,

of course, were available to feeding birds. The rice field blind that we sampled below Gueydan in one of the rice fields there indicated 21,780 pellets per acre. In another area we have investigated in south Louisiana just to see if we could recover shot in the marsh at Grand Chenier we estimated 34,256 shot per acre.

As far as the State is concerned, I have one other series of slides to show you. This map of the State just illustrates the areas where we have collected gizzards during the past several years to look at the lead ingestion problem as a whole here in Louisiana. These gizzards, here again, were returned to the lab and examined for ingested lead. The numbers of gizzards examined involved thousands of birds. The gizzard contents were washed out carefully and any lead pellets that were found were recorded for each individual bird. If there was any question as to whether the lead found was shot into the gizzard or whether it was ingested, we simply examined these pellets under the microscope. If a lead pellet has gone through the gizzard with the force to penetrate to the inside it will be deformed and out of shape. That particular gizzard was kicked out of the sample and didn't count. Only those pellets that showed signs of wear from the grinding action of the gizzard were used in determining the extent of lead poisoning in birds in Louisiana.

This is the same slide shown a while ago just to emphasize that these pellets are reduced in size from the grinding

action of the gizzard. They are difficult to find. On the whole, this is what the State of Louisiana looks like on a species by species basis. Twenty-two hundred plus mallard gizzards, 14% contain at least one ingested lead pellet. Mottled ducks, which a lot of you know as summer French ducks, is a bird that does not migrate into Louisiana but remains here and breeds here. It's an important bird locally in southwest and southeast Louisiana, both in the rice fields and in the marsh. Twenty-six per cent of these ducks had at least one lead pellet in their gizzard--ingested lead. Graduate research work done at LSU indicated that those birds are also picking up lead in the summer and in the spring, both prior to and after the hunting season. Pintails, 1200 birds, contained 12 per cent; Lesser Scaup, 368 birds, 31 per cent. Those are the four species in the State that seem to have the worst problem. The largest percentage of those birds are carrying lead. We also looked at significant numbers of other ducks. If you look down at green wing teal and gadwall and shoveler, those species carry very, very low levels of ingested lead. Here again, I would just like to summarize by saying we have had documented problems of lead poisoning here in Louisiana. We think we know where the serious problems are. The steel shot zones have been applied to those areas. We feel like we have good information on lead poisoning and the regulation, we think, is called for. The amount of lead put into Louisiana's wetlands because of the intensity of waterfowl hunting is extremely large. That concludes my remarks.

MR. RICHARD YANCEY: Thank you, Hugh. This concludes our panel of speakers. In case anyone came in late, we would like to advise you that the Commission will meet Wednesday morning in Baton Rouge at 11:00 A.M. to determine whether or not it wishes to see this year's steel shot regulations continued or discontinued.

Now, there's one set of figures I have here that I got from Bob Smith earlier that I think you should be made aware of. Of twenty-two responses which they received from twenty-two states in the three eastern flyways, twenty-one of those states have responded in the affirmative with regard to continuing steel shot regulations that have previously been established for those states. One state has voted to not have the steel shot regulations in its state except on the National Wildlife Refuge. There are some states that have not yet responded and we are one of them. There are two or three others that have not yet responded. At this point this is how the tally stands from the states that have responded to the U. S. Fish and Wildlife Service as to whether or not this year's steel shot regulations should be maintained in those individual states.

Mr. Chairman, at this point I'm sure you want to hear from those present who would like to make recommendations to you and to provide information, evidence, additional comments, proposals on what better alternatives should be put into effect to cope with the lead poisoning problem other than the steel shot regulation or any other comments that anyone would wish to make.

Thank you.

CHAIRMAN DOYLE BERRY: Thank you, Mr. Yancey, and the speakers before you.

Representative Mike Hogan. Mike was former Chief of Enforcement of the Wildlife and Fisheries.

REPRESENTATIVE MIKE HOGAN: Mr. Chairman, Members of the Commission, Mr. Secretary, Mr. Assistant Secretary, ladies and gentlemen. I'm not going to argue the pros and cons of whether or not ducks and geese die after becoming sick from ingesting lead pellets. What I have seen tonight and what I know about lead poisoning, I'm sure that's true. However, we have been shooting lead pellets since time immemorial up until a couple of years ago. I guess there was no steel shot on the market.

I don't really recall any big duck and geese die-offs, but it would seem to me that while we heard the men of the U.S. Fish and Wildlife Service put in the regulations the steel shot after a lot of investigation and study, apparently very little input was put into it by the manufacturers for shotgun shells because you heard here tonight that the first steel shells that were made were very inferior and while they are getting better, they are not up to par yet. They also went along with designating only certain areas for the use of steel shot and since the shotgun shells manufacturers could only come up with a 12 gauge. They went along with that idea and it would seem to me we are doing very little, if anything, to curb the

die-off or kill-off of birds from lead poisoning by prohibiting the shooting of them or shooting at them with only 12 gauge guns and in only certain designated areas. (loud applause)

They tell us that the ducks ingest these lead pellets while feeding and I'm sure that is how they get them but if you look at the map, the areas that are designated is basically, especially in south Louisiana, of course, you have Catahoula Lake up there and I'm not that familiar with the terrain there but in the marshes of south Louisiana it is designated as steel shot only with 12 shotguns is that area where ducks go back to roost at night--not where they feed in the rice fields all day. (loud applause)

Surely there is die-off in the marsh and the game preserve because when they get ill they get in there and they have cover and since they can't maneuver good they can cover themselves or keep themselves from being seen and that's where the die-off is. Where, if they get this from feeding, are they getting it in areas that is not covered by the steel shot.

Now, personally, you know you read the paper that the U. S. Fish and Wildlife says we are not going to put out this regulation this year because Congress didn't give us the money so we can't do it. Well, gentlemen and ladies in the audience, they also say if the states will give the federal agency authority, they will enforce the law for steel shot. Now, make me understand how it's going to cost the United States Fish and Wildlife less money for the agents to enforce this regulation

could be enforcing the other many good laws and regulations that they have on the book. You have to realize that during the duck season there is a lot of other seasons opening: rabbit, squirrel, and all this other sort of thing. Having been with the Wildlife and Fisheries for about 5 yrs., I know about what the complement of game agents are. You are lucky if you average three game agents for the parish. Now, wildlife enforcement is a twenty-four hour ball game. What we are saying is we have an average of one man per parish every eight hours. I don't believe they need any other rules and regulations, especially one that I feel is really not going to help the situation we say here tonight on the film and in the slides, believe me. If it will do anything twoard conservation of our wild ducks and geese, I would be the first one to be up here fighting for it.

I have been in the State Legislature now and I spend a lot of my time trying to pass laws that I think are good for conservation of our wildlife and game and I spend a lot of my time fighting bills that come through there that I think are bad for it. We don't know how many states adjoining us are going to enforce steel shot. I understand Mississippi and Arkansas have already notified the federal government that they don't intend to do it. Someone told me California is not and I don't even know that California has a restricted area, but I heard this. Now, as far as I am concerned, there is only one group with benefits from steel shot regulations and, believe me,

members of the Commission, ladies and gentlemen, that I am not being facetious when I say this. The only group that will really benefit are the dentists of this state because if you have ever bit into a piece of duck or goose with a lead shot in it you know what it does to your teeth. Now lead will give, steel shot won't, and the tooth is the one that is going to give. Now that's a minor point but in winding up, I wanted to say that.

Let me say one more thing in closing. I know that there are a lot of people here that want to talk but I think I am better qualified to say this than possibly anyone in this room here tonight. We have a lot of boards and commissions in this state--some are constitutional boards, some are boards that are set up by the legislature by law. We have some set up by orders of the Governor, directors of the Governor, but I want to say to you, ladies and gentlemen here tonight in this room, I know this Board, this Commission here. I have spent five years with them. I want you all to know that they are not up here tonight just making a show and that they have their minds already made up what they are going to do on this thing. They are here tonight because they are conscientious and they really want to know how you feel about this steel shot issue and for no other reason. Thank you very much.

CHAIRMAN DOYLE BERRY: Thank you, Representative Mike Hogan. Dr. Glasgow. Dr. Glasgow, former Director of the Louisiana Wildlife and Fisheries Commission, Assistant Secretary of U. S. Department of the Interior, and now he is at L.S.U.

for a long time with a lot of creditability.

DR. LESLIE GLASGOW: Thank you, Mr. Chairman, Members of the Commission, ladies and gentlemen.

Although Representative Hogan and I may be on opposite sides of this issue and other legislative matters. One thing that I have learned in politics is that you can have the most violent argument over an issue and still be the best of friends; so no matter how much you may disagree with me, I still want you as a friend. I hope we can always count on you.

At the age of thirteen I bought my first shotgun, It was a used single barrel 12 gauge for $13.00. That was fifty years ago last fall and I have been hunting ducks and spreading lead across the marshes ever since. I have no way of knowing how many lead pellets I must have scattered out across the waterfowl habitat, but I know it was a lot of lead.

Fifty years ago, few hunters knew that lead was toxic to waterfowl, but at that time waterfowl scientists knew full well the same thing that they know today that lead did kill ducks.

Today, nearly every waterfowl hunter knows that ducks eat lead but many do not realize the seriousness of the problem. The pellets I fired 50 years ago have likely sunk out of sight or below the level which ducks can reach, but not all of them. Those that fell on hard surfaces are still there and they are very likely still killing ducks. They are not only killing them today, last year, they will be killing them for the next fifty years. So, I have a little different view than Dr. Smith.

The increase in lead that is available for waterfowl because each year we spread around a tremendous amount and every year there is a residual of lead from those previous seasons. There is a gradual buildup but it is a slow one and the only difference I have with Dr. Smith is a small degree and essentially we are on target.

Well, throughout the intervening years waterfowl hunting has grown in popularity. There are about 100,000 duck hunters in Louisiana, although the number varies some with the supply of ducks. That's a pretty good round figure to use but if you assume, as Butch Bateman did, that most hunters use 12 gauge guns, that they use No. 6 shot, and I used 270 pellets rather than the 281 that Butch used. Every time these 100,000 hunters fire one time, just one time, they lay down twenty-seven million pellets. Now, if they bag 10 ducks, they spread 162,000,000. If they bag 20, they spread 324,000,000. If they bag 30, it goes on up to 486,000,000 pellets.

Most of these pellets remain near the surface during the first year and they are readily available to waterfowl for their feeding, but the pellets on the harder surfaces are going to be there much, much longer. Most of them sink below the reach of ducks by the end of the third year so the maximum number of pellets is available to waterfowl during the latter part of the current hunting season and immediately thereafter so we have the maximum number of sick and dying ducks soon after the waterfowl season closes. Hunters are seldom in the field at this time.

They are too busy at home catching up on their chores that they have neglected when waterfowl season was open. They do not realize the frequency nor the magnitude of the die-offs because lead pickups seek out ditch cover in which to hide and die. Many die-offs are probably never detected by anyone but ducks are dying 365 days a year from lead poisoning. Sick and dead ducks are quickly removed from the environment by scavenging predators.

Each year there is a tremendous amount of lead that is laid down and I'm sure that this lead is building up to a small degree but I think the major thing we have to think about is the total waterfowl mortality not just from lead poisoning but from all causes. There are some pretty good figures and I'm going to assume that they are correct. I know that they are fairly reliable. If a natural mortality equals 35 per cent, and that is a good accurate figure, the hunters harvest about 25 per cent, and that 5 per cent die from lead poisoning, you end up with a 65 per cent mortality. They are not accurate because hunting and lead poisoning both substitute for some of the natural mortality that would occur so you cannot add these figures and use that total figure. I'm not sure, in fact I do not know, what the total mortality is but I'm sure of one thing and that is that we are reaching the point of total mortality the waterfowl population in this country can stand.

If we exceed that mortality that they can withstand we are going to begin to lower our waterfowl population very rapidly

because that mortality will remain about the same for a prolonged period of time, so if we persist in the use of toxic shot and the mortality increases slightly, we are going to drive some of the ducks population of complete species to a danger point, and we are going to drive others if we persist for a long, long time, we are going to drive them to extinction.

Now I am equally concerned about the lever we are handing the people who oppose hunting almost as I am for the welfare of waterfowl. We are surely headed for court if we have failed to take heed of the handwriting on the wall and Louisiana is likely to be the first target. The groups don't have any friendship for you or I because we are hunters. There are likely representatives in this room tonight listening to everything that is said and this will certainly give them more ammunition than they have ever had before if we fail to go ahead with the steel shot. They don't have to look for a friendly judge to win their case, all they have to do is take it into court and the judge decides on the facts. He's going to impose the use of steel shot, or no hunting. So, I think the major issue is whether we want to continue hunting, whether we want to continue waterfowl populations at somewhere near the level we have now, or get rid of lead.

I think that some of the questions that were raised by the prior speaker had been problems . . . I think we should have imposed steel shot for all gauges. That's part of the problem today because we didn't. I think we should have imposed

steel shot statewide. We didn't, so that a major part of the problem today because hunters see his friend over in another area using his normal lead shot and he has to go to steel shot, pay more for it, and this price is one of the major issues. If we had gone statewide, that we had required steel shot with all gauges, half of you people would not be in this room tonight so it has been an issue.

I think that the Commission is faced with one of the most critical waterfowl decisions it will ever make. I think you people, as hunters, are facing one of the most critical decisions you will ever make. I urge the Commission and I urge you, as hunters, to hold the line on what has been proposed and to continue the use of steel shot in those areas for which it has been recommended. Thank you.

CHAIRMAN DOYLE BERRY: Thank you, Dr. Glasgow. Senator Jesse Knowles. Next will be Representative Richard Thompson after Senator Knowles has his turn.

SENATOR JESSE KNOWLES: Mr. Chairman, Mr. Secretary, Members of the Commission, all the hunters, concerned citizens, and ladies. I'm sure you are concerned too or you wouldn't be here. I want to commend the Commission for giving us the opportunity of appearing here this evening and you can see that there are many people concerned about decisions. I particularly want to compliment those who have spoken, the experts, the expert witnesses that have been brought forth. Dick, I think you did a good job of picking good people. I don't always agree with

them but you did a good job.

I am Vice Chairman of the Natural Resources Committee of the Senate. I have had the privilege of having these gentlemen before my committee many times. In fact, I have even handled some of their bills. I wouldn't handle this one. No, they have very critical questions to resolve and I would rather be in the Legislature. I served with Sonny Gilbert here for two terms and the questions were not quite as sharp. We had some tough ones but this is a serious question. Dr. Glasgow and I have worked experiments together and we worked five years on one experiment to determine where mallards went after they got grown. We still don't know where mallards go after they get grown. We think maybe they are still flying around. Isn't that right, Doc?

The problem that comes to my mind is in picking the areas in south Louisiana where you would use steel shot as they did pick some areas that has humus that is 7, 8, 10, to 12 ft. deep. I am pretty sure that a lead shot probably drops into humus about 4 to 6 inches the minute it comes out of a gun barrel. One point, the rules say that south of Intercoastal and west of the Calcasieu River you must use steel shot. That is known as Hackberry, Black Bayou area. Humus marsh and deep. I think they made a mistake picking that area. I would assume that it was just bad judgement on the part of those who picked the area. I would hope that they have made this mistake in other areas because I don't think it could be intentional. Probably, I might add that I also managed 100,000 acres of marshland, too, so I know something about the marsh area. In ricefields they may

have some problems with this ingested shot. I do have some doubt that our ducks are picking up that much, that many shot, in this heavy deep marsh of humus where you have 8 ft. upwards to 12 ft. of humus.

I would ask the Commission to give serious consideration on Wednesday to do away with the steel shot proposition for this year. Continue a serious thorough research on this because every man in this room will want to do everything possible to conserve and take care of the duck population that will go back and I know that.

Mr. Chairman, Members of the Commission, the problem that we face many times in the Legislature and that you will face this evening and on Wednesday is that the lack of understanding, education, and belief in the problem is what the whole thing is tonight. I have reservations and I have heard much testimony over the eighteen years that I have been in the Legislature. I have great faith in biologists. I believe that they have great intentions but I've also seen the case where biologists have been mistaken, and some very fine men have spoken up here this evening. One fellow that I couldn't argue with is the gentleman who was telling us about the shotgun shells. I don't know anything about that but I do know something about the duck business and the ecology of Louisiana. I know there are some hot spots in Louisiana. That is a resolution you must make. In the marsh areas, I do know that we should be given a year of reprieve. Do a more and thorough study and you come back and if

you have to come before the Natural Resources Committee to get this out, after you all make your recommendations, I can assure you that we will make a determination that will be for the benefit and for the best interest of Louisiana, the wildlife, and the people who harvest that wildlife who are our citizens. Thank you.

CHAIRMAN DOYLE BERRY: Thank you, Senator. Next is Representative Richard Thompson.

REPRESENTATIVE RICHARD THOMPSON: Mr. Chairman, Mr. Secretary, and Members of the Commission. Mr. Secretary and Senator Gilbert, I think I have served in the Legislature with both of you. You know, to represent my people as best I can. I take a reading of what my people back home want.

I think Dick Yancey needs to be credited on getting a very, very one-sided story before these people that are going to have to make their decision next Wednesday. I think Dick Yancey did a tremendous disservice to this Commission by presenting one side and not giving them both sides. As a legislator, I would strenously object to my personnel doing this. I think they should have the benefit of both sides of the question.

How many of you all here are farmers? Farmers? They came in and they told you this is the way to do away with brucellosis twenty years ago. Ten years ago, five years ago, and today they are telling you what you shouldn't do twenty years ago is the thing you should do today. We still have brucellosis in the State of Louisiana and it is still giving us

problems. I vaccinated my cattle. When they were calfhood they lost a ring out of their ear and they came back and said that they got brucellosis because I vaccinated them.

There are fallacies in all that they have shown us. They haven't shown us another cure that could be something beneficial to the hunters of the State of Louisiana. I know that everyone of you are interested in this or you wouldn't be here today. I know that I am interested in it. I have checked with my people and I have the first to say that they wanted steel shot. I represent three of the parishes that border on Catahoula Lake--Grant, Rapides and LaSalle and not one called me and said, "Richard, we need steel shot." They have all called me at wee hours of the morning and night and said, "Please, don't let that happen to us."

Let's study it another year and let's look at another part of it. This is what I hope this Commission will do. I strictly hope that they will look at this thing, that they will be positive before they act. I hope that they will give the people of the State of Louisiana a chance to be sold on a program not by a few slides and statistics that present one side of the story because that, ladies and gentlemen, the man up here about the statistics, steel shot over lead shot, I've read magazines that a whole lot of this was true and a whole lot of it was not true. I know good and well that they have found pellets in the gizzards, or they wouldn't have said so. Burt, you have had an awful lot of your agents, I'm sure, checking

lead shot because I have seen them in the field. My people have been complaining about where they were and now I have found out. I believe where some of them have been going checking these lead shot. In trying to prove a point that we are trying to sell to the people that I think we need to look at one more year or maybe two more years or maybe never enforce.

Gentlemen, I know you all because I have served in the Legislature with a good many of you. I have served on other boards with some of you. I know all of you to be people that will stand up and be counted and I think you all will do that next Wednesday. I hope and pray that you will use your best judgement for all of us and for all of you. Thank you for being with us here.

CHAIRMAN DOYLE BERRY: Thank you, Representative Thompson. Mr. Paul O'Brien.

MR. PAUL F. O'BRIEN: Mr. Chairman, Members of the Commission, highly qualified staff, ladies and gentlemen, fellow duck hunters. My name is Paul F. O'Brien, Jr., from Shreveport.

I'm not a biologist nor a ballistics expert. I am, however, a hunter of waterfowl for over 40 years in Louisiana and elsewhere. I have fired over more than 100,000 rounds of shotshells at game and in clay target competition. I am not sure how serious lead ingestion is to the duck and goose population. However, if you concede it is as bad as the U. S. Fish and Wildlife Department says it is then you are talking about up to two and a half million birds dying every year. My main objection

to the federal government's solution is two-fold. The first being that instead of isolating the hot spot area, they have covered excessive acreages in their broad brush approach. The second reason being that steel shot isn't as lethal as lead shot is, particularly, at longer ranges. The ammunition companies have no plans to produce shot shells in steel in any gauge other than in 12. We will continue to shoot lead in the smaller gauges or else tell the youngsters and ladies that the government does not want them to hunt. According to migratory stamp sales, there are in excess of two million duck hunters in this country. If every duck hunter crippled one bird that dies as a result of shooting steel shot then the government-proposed solution will result in the same number of dead birds as the problem they are trying to solve.

There needs to be more study made to locate a better substitute for lead than steel. The average duck hunter could care less what kind of shell he is shooting as long as it is as effective as the lead shell and not three times as expensive.

I have a question to propose. Would the U. S. Fish and Wildlife Service go to the trouble of conducting this most informative program if in fact Congress had given you the funds to implement the law without state ratification. I do not believe the answer is "yes." I don't think so because if they had, we would have had this program crammed down our gizzards. Thank you.

CHAIRMAN DOYLE BERRY: Thank you, Mr. O'Brien.

MR. CLYDE DIDIER: Mr. Chairman, Members of the Commission, staff members, ladies and gentlemen. I'm Clyde Didier from Baton Rouge. I am past chairman of the Ducks Unlimited Chapter in Baton Rouge and member of the Louisiana Wildlife Federation and many other organizations that try to help hunting and fishing in Louisiana.

I have listened to these reports tonight. They were very, very informative. Both pros and cons. I think there are some matters that have to be considered before the Commission makes a decision and it is not concerning steel shot. It's concerning many other things that have happened in Louisiana over the years for the betterment of duck hunting, fishing, and everything else in this state.

Dr. Glasgow and Mr. Burt Angelle have had a very capable staff over the years, have done an awful lot of work to get us the wonderful hunting regulations and fishing regulations and everything else we have in this state. Some of you as I look out in the audience and can see that you were not even hunting a few years ago. You were too young. We used to ride all the way from Baton Rouge to our ducks and geese and we could kill two ducks. That was the limit. The hunting was 25 days. The staff members and the Commissioners and everybody else worked on it and we got it up to four.

Now we have a point system. You and I can go in the blind and come out with 20 ducks, each 10, which is a wonderful limit.

That just didn't happen, ladies and gentlemen, it took

the staff members, our Commissioners, the fellows serving on this Commission, a lot of politicing and work. When you go in with the U. S. Interior Department, you are fooling with politicians, gentlemen, and that's what it takes. You have to play the game. Another thing, when was it when you could go out in September and hunt teal? Not until 1965. It took a lot of work. We have to go out in the rice fields early in September. I hunt in rice fields and see blue winged teal just flying all over the place and all we could do was just look at them. Now we can hunt. We have a nine-day season. That didn't just happen. It took work on some of the fellows' part. We are the only state in the United States, right now, that have two zones--the eastern zone and the western zone. That just didn't happen. It took a lot of work on somebody's part. We have 55 days of hunting season this year. Many, many other things that could come up that these people have worked on.

I strongly urge that the Commission before they make any decision to do away with the steel shot consider more than just this one issue. We could probably make a lot of people mad in the Interior Department and other things may come up that might hurt our situation in the future. We have been working hard for the preservation of ducks, to Ducks Unlimited and other organizations and Louisiana Wildlife Federation to get everything better for us in Louisiana. I think you will find out we really, really have a fine organization. I live down here but didn't even dove hunt, gentlemen, because a few years ago it

was a limit of six. Now we've got it up to twelve. There were times when the Interior Department met in Washington to consider problems in Louisiana and none of our staff members were even invited to the meeting. Now they call and invite them to the meeting and want their counsel. We work with them, we have the confidence of the people in the Interior Department, they rely upon our personnel to give them the benefit of their background, their Louisiana know-how and everything else. I can't tell you anything about steel shot. If it's for the better preservation of our wildlife, I'm for it one hundred per cent. I can't come up here in fifteen minutes, read an article and tell you whether you ought to have steel or not. There have been professional people who are studying this thing twelve months out of the year. They have come up with a recommendation. I think it ought to be taken.

Mr. Chairman, Members of this Committee, I strongly urge that you stay with the steel shot regulation and let's keep working to do better for the fish and wildlife in Louisiana. Thank you very much.

CHAIRMAN DOYLE BERRY: Thank you, Mr. Didier. Mr. Frank T. Harris, III. The next speaker will be Mr. Henry Bernard.

MR. FRANK T. HARRIS, III: Distinguished members of the Louisiana Wildlife and Fisheries Commission, other people here tonight, concerned sportsmen, conservationists. I wish to tell part of the other side of the story that was not told in the very lengthy preliminary program which was, I might add, was all

steel shot.

Congress voted recently not to fund the implementation of the steel shot program. It has left this important question up to the states. We have had plenty of implementation here tonight, gentlemen, by the early program. My purpose is to first give you a little bit of my background which isn't much. I've hunted waterfowl since I was eight years old for over 35 years. Fifteen of the last years, I've hunted waterfowl in the state of Louisiana since becoming a resident here. Before that I was a waterfowl hunter in the state of Missouri and I remember very well during the years of the 50's when the Fish and Wildlife Service with all its wisdom, started feeding Canadian Geese in the Mississippi Flyway. We saw a lot of Canadian Geese in the earlier program, ladies and gentlemen, but where are they now? They no longer come south because the U. S. Fish and Wildlife Service fed them corn and short-stopped them. (loud applause)

But, I am here also to present a petition tonight opposing the use of steel shot in Louisiana and then I will have some further comments. This petition is signed by 563 people in the parishes of Caddo, Bossier, and LaSalle, Catahoula and Concordia. It includes 150 members in the Shreveport-Bossier City area that are sponsors of Ducks Unlimited. These people contribute over two hundred dollars apiece annually for the preservation and acquisition of wetlands for this very valuable resource--waterfowl that we all love dearly.

This petition reads: "We, the undersigned, sports persons and waterfowl hunters, are opposed to any implementation of the use of steel shot for the purpose of hunting waterfowl in the State of Louisiana. It is our opinion that the increased loss of waterfowl due to crippling with respect to the substitution of steel for lead far outweigh any benefit gained. We concur with the Congress of the United States that the matter is one of state, not federal cognizance until and unless an economically and ballistically satisfactory substitute can be developed, tested and marketed, there should be no prohibition in Louisiana as to the use of lead shot for waterfowl hunting."

Ladies and gentlemen, as part of this presentation, I gave each of our Commissioners a little packet containing five exhibits that I would like to mention to this group of concerned sportsmen and conservationists this evening. The first exhibit is recent paper. I would like to point out that all of this information is not something that we refer to from the government's steel shot's edit of 1976 on the substitution of steel for lead. It doesn't go back 20 years or even 10 years. This is all 1977, ladies and gentlemen. This first paper that I want to refer to will be published in your next issue of the Ducks Unlimited Magazine that many of you will receive. It's entitled, "Steel Shot - A Ballistician's View." This paper was given by Mr. Herman Buckstruck, Sr., Engineering Associate with Winchester-Western in East Alton, Illinois. I would like to point out a fallacy. I have checked the velocities personally. I am not a ballistician,

but neither are some of the other people that have spoken this evening.

Mr. Buckstruck has a Master of Science degree from the Massachusetts Institute of Technology where he also served as staff member before joining Winchester-Western and these are his conclusions. What the data tells us then is that no matter where we place the target, in the pattern, or how we compare the numbers in terms of energy, penetration, or both. The steel loads are simply not as good ballistically as the lead loads. As a matter of fact, the best two and three-quarter inch steel loads, even with larger pellets, are still inferior to so-called standard one and one-quarter ounce lead load. The one and one-quarter ounce steel loads do come closer than the one and one-eighth ounce steel loads to matching that standard, one and one-quarter ounce lead load, but there is still a gap. Several recent articles on steel shot, one in particular that I think you all remember very well. It's an author who spoke tonight. I might add that he has a master's and a bachelor's degree in journalism. He is not a ballistician.

Several recent articles on steel shot have stated that we can improve the loads by increasing their muzzle velocity. We cannot do this for we would lack accessible powders. I confirmed this by talking to Mr. Dick Dietz, in Bridgeport, Connecticut, with Remington-Arms, and he is in agreement with the statement. I talked with him Friday, and even if we could, the velocity increase would accomplish little at the target. For example, a

100 ft. per second increase, when we talk about going from 1200 ft. per second to 1300 ft. per second, etc., but this is what we accomplish. A 100 ft. per second increase, an instrumental velocity of steel shot and that's only about a 25 per cent increase of 40 yards. This net decrease, the instrument decreases as the instrumental velocity climbs. In other words, the effectiveness from shooting on shoulders is far more impressive in effect than on that 40 yards duck.

But when they answer these questions and pursue professional solutions to the problems, we want them to recognize the ballistician's viewpoint. No matter how you look at it, steel load performance is inferior to that of lead loads.

The second article, or the second exhibit, I would like to refer to is a letter by a man on the Board of Directors, National Wildlife Federation, and I know that all of the very distinguished Commissioners here have recently received letters from the National Wildlife Federation urging compliance with steel shot regulations. I want you to know that is a view not commonly shared by all members of the Federation. One in particular, Mr. John Madison. "Dear Mr. Harris: Pursuant to our conversation of October 19, I wish to comment on your concern regarding a recent National Wildlife Federation letter to all state conservation directors urging them to endorse and enforce U. S. Fish and Wildlife Service implementation of steel shot regulations. That view of the National Wildlife Federation staff does not reflect the opinion of all board members, and

certainly not all Federation affiliate members. The letter to state conservation directors contains a number of misleading statements. For example, it infers that increased crippling with steel shot is no longer a matter of concern to conservationists. This is not so. It is a point of considerable concern particularly to those of us who know that the best modern steel shot loads are still inferior ballistically to even standard lead loads used for waterfowl. Many of us are concerned to widespread unnecessary implementation of steel shot for waterfowl could result in increased crippling levels that would exceed current lead poisoning levels. Here in Illinois, for example, check station data from 5 major waterfowl management areas, last year showed an almost three-fold increase in crippling losses after steel shot was implemented.

The next exhibit I would like to refer to is testimony that was given on May 25, 1978, by Mr. Ray Arnett of Stockton, California. It was given to the Committee on Administrative Practices and Procedures of the Senate Judiciary Committee Oversight Hearing. It reads: "Mr. Chairman and Members of the Committee, I am Ray Arnett of Stockton, California, former Director of the California Department of Fish and Game, immediate past President of the National Wildlife Federation, and currently serve on the board of the National Wildlife Federation as past President." Mr. Arnett gives a long history of the way that the Federal Government has shoved steel shot edict down the states. Comments from the Iowa Conservation

Commission would like to object to the proposed special regulation requiring the use of steel shot in the upper Mississippi River Wildlife Refuge.

Idaho Fish and Game Department. We are very disappointed, we have no problem with lead poisoning. We have objected to the regulations every step of the way, locally, regionally, and nationally, and the U. S. Fish and Wildlife Service has given absolutely no consideration to our research data.

Nevada Department of Fish and Game. We can't find any mortality from lead shot. The steel shot ruling applies to Nevada's Still Water Wildlife Management Area. We oppose their Fish and Wildlife Service proposal to implement the lead shot ban on the refuge. We felt that further information was necessary before they did anything. We just can't see the need for the ban. We don't think it's going to accomplish anything.

In California there have been many heated arguments with the feds about the scope of waterfowl mortality in California. They say our losses due to lead poisoning are two hundred thousand or more. We say the loss projections based on field information indicate losses in the two thousand category. Yet the arbitrary attitude of the Fish and Wildlife Service in refusing to accept our field data, research findings, and evaluation is hard to swallow, particularly, when they have no data of their own to support their preconceived ideas.

I would also like to compliment. We hear a lot about the Belrose study and about how the Fish and Wildlife Service has

conducted recent studies on the ingestion of lead shot and I would like to refer specifically to a report that I had to write U.S. Senator Bennett Johnston after repeated requests from the Fish and Wildlife Service and one personal phone call in 1975 to Dr. Robert Smith. He is here this evening. I asked Robert Smith if he would please send me a copy of the Sanders and Erwin study. Dr. Smith said that he would do so but it was a very far-reaching study but it's impact would certainly be discussed and put into the final edit on steel which came out in 1976. It wasn't and their excuse is the fact that the Sanders and Erwin study wasn't completed until the final study came out. Well, you can't tell me with all the federal people that they have checking and working on the program that they didn't have a very good idea with the way the study was going and it was completely contrary to the environmental impact study on steel. This is typical. What of this data. Well, let me quote Mr. Arnett. "In 1975, the Fish and Wildlife Service requested the Illinois National History Survey to conduct further studies of mallards dosed with various type of shot pellets. The report was written by Dr. Glen Sanderson and Dr. James T. Erwin, the Section of Wildlife Research. In a recent letter from the Fish and Wildlife Service in answer to Senator Johnston, they stated that nothing had (pause) Dr. Gilmore, Asst. Director, stated that nothing new had come out of the study. Well, I beg to differ with Dr. Gilmore on this point. His research included ducks dosed with lead pellets and fed a diet of corn and water. In the past this has always proved to

be a highly lethal combination. However, all previous tests of this type have been conducted with mallards held off the ground in pens floored with wire.

In the 1975 Sanders and Erwin test, mallards were kept on the ground, had access to soil as well as corn and water. Even though some of these corn-fed ducks were dosed with as many as five No. 4 lead shot pellets, mortality was extremely low. Birds that should have died, did not die. Test birds on a complete feed ration were given five No. 4 size lead pellets showed no mortality. No mortality!!

(applause)

It can only be concluded that some property in the soil, physical or chemical, greatly reduced the toxic properties of lead. By the way, these results have not been made public. They weren't made public by the Fish and Wildlife Service. They said that we could request the data from them but who in the Hell knew anything about it? (laughter and applause)

Now, distinguished Members of the Commission, I'm not up here to argue and did you ever go home in the evening with a business problem and realized that by golly you probably were going to make a mess of the situation and going to have a confrontation with the wife but just couldn't keep from it and, sure enough, you had things pretty well messed up by dinner. Well, I feel like that I have kinda done that this evening, but the purpose of what I am saying is the way to build confidence in a program by the federal government is not the way they have gone

about it. If I wasn't concerned about increased losses due to crippling, I wouldn't be here. I picked up sick and dying birds on my farm last year which borders the Catahoula National Wildlife Refuge and Catahoula Lake for a mile. I have picked up over 20 birds during the split season with festered breast wounds and festered wounds in wings and no shot penetration. I didn't find any of these birds the year before. These birds were just non-existent on the place. I don't know where they went; maybe these dumb hunters that don't know how far a duck is and crippling all these birds by skyblasting with lead. I don't believe it, gentlemen. I also pulled the gizzards from 170 ducks. I personally did this under a flood light at my cleaning station below the camp. Only in two did I find that had lead shot. I picked in their gizzards. I found three that had steel shot in their gizzards. That's over a hundred and seventy ducks, ladies and gentlemen. I hope that the Commission will consider what the people here have to say tonight. I wish to thank all of you for this chance to come up here and speak. Thank you very much.

CHAIRMAN DOYLE BERRY: Thank you, Mr. Harris. Judge Lee from Pineville.

JUDGE LEE: Thank you, Mr. Berry, Mr. Angelle, Mr. Yancey, Mr. Bateman. After our little discussion today, I'm proud to find that you are a human being after all. By the way, it's hard to follow a gentleman that just left up here. I guarantee it kind of put the boot straps on me but I am Chairman of the

Central Louisiana Chapter of Ducks Unlimited and I might say that almost to the person, our chapter, sponsors included, are opposed to the steel shot regulations for the reasons that I am going to give you here tonight. Jim, if I might have my briefcase here, please.

Mr. Luttrell and I have been working very closely on this matter and last year we had an appointment with Mr. Robert Herbst, who is Asst. Secretary of the Interior. In fact we had the first meeting with the gentleman. He was sworn in at 5:00 o'clock one afternoon and we had a meeting with him at 9:00 o'clock the next morning. The only thing that I received from the Department of the Interior since that date and from the Department of Wildlife and Fisheries of this State, is promises. No facts, no data, nothing to substantiate what they are proposing here today. We got in touch with Congressman Treen, Congressman Breaux, Congressman Long, Senator Johnston, Senator Long, and our other congressmen of this state along with a senator from Utah. It was through their efforts that we are here today and we owe them a great deal of thanks. We really do.

It seems mighty strange that with all the big guns that the Department of the Interior can muster and all the so-called reports that they want to use that they can ignore certain reports such as the Nilo Game Report and the Sanderson-Erwin report and many other reports. This proved what the four that have got up here and said tonight. The only thing that the Dept. of the Interior, Mr. Bateman, Mr. Yancey, want to use are those

things that are favorable and make it sound like there is just one side to this story. This is just not true!

I'm reading from the Congressional Record here. That's some of the articles that I want to bring to Mr. Smith's attention, Mr. Bateman's attention, Mr. Yancey's attention. Now this is you all's own bosses speaking, not me. It's from the Congressional Record, and I quote: "The implementation and enforcement of steel shot regulations by the Fish and Wildlife Service has been a continuing source of controversy. Even wildlife preservation groups cannot agree on the soundness of this policy. Studies into the causes and extent to lead poisoning among waterfowl are incomplete and many groups believe steel shot requirements are premature at best. Implementing these regulations would require a complete retooling of the shot shell industry as well as a costly enforcement program," and it goes on.

Well, if you can't convince your own bosses, how can you expect to come down here and convince us? I don't understand that! (loud applause)

In 1972 abd 1973, Winchester-Western conducted a very costly experiment. It's better known as a Nilo Game Report. Game Form Report. Yet you don't find it in one meeting presented by the Department of the Interior, or by Mr. Bateman, or by Mr. Yancey because it proves them wrong. I'm just going to quote you a few paragraphs from this thing and I'll say to you, the people here, and also to Commission Members.

Now this report that was prepared by Mr. John Madson

that was referred to by the previous speaker and Mr. Ed Kozicky, or I might say Doctors Ed Kozicky and John Madson. They are with the Winchester-Western and they are Director and Assistant Director of the Conservation Department of Winchester-Western. They are very knowledgeable biologists and are very knowledgeable in the field of ballistics. I also have the article prepared by a gentleman from Oregon. It just so happens, I think he is the one from Oregon that wrote it in this latest issue of Ducks Unlimited and I can prove him wrong with his own article. On page 22, and I did furnish a copy of this report to some of the members although I did not to all. If you need it, I will give it to you. It's very informative and it is actual facts and not suppositions that we have heard up here tonight. On page 22 it is stated that 32 showed the relative efficiency of the 4 shot shells at the 6 yardages. They used copper, steel and lead. For instance, at 50 yds. one can expect to bag 8.8 mallards per mallard cripple with No. 4 lead as compared to 2.5 mallards for every cripple. In other words, you will kill 4 times the ducks with lead than you will with steel.

This is not me speaking, of course, I couldn't get Mr. Kozicky or Dr. Madson here and they certainly wouldn't get Mr. Kozicky or Dr. Madson here.

They go on to state that we can only conclude that use of steel shot and the two and three-quarter inch 12 gauge shot shell for waterfowl hunting will significantly increase crippling loss.

On Page 26, the conclusions directed to the Bureau. The

The Bureau will be involved in a trade-off--a gradual decrease in lead poisoning losses for an annual increment in crippling loss of waterfowl and to us a less efficient shot shell load with its attendant increase in crippling of birds will reduce the quality experience of waterfowl hunting as we know it today. Hence, the Bureau of Sports, Fisheries and Wildlife needs to validate current lead poisoning losses by flyway prior to a final decision on the shot. Now, one letter that I did receive from the Department of the Interior, Bureau of Wildlife and Fisheries, was most astonishing and I might say a great revelation. They stated unequivocably that the cost of lead shot shell would soon exceed the cost of steel shot shell in the very near future. In the next year, or maybe two and I heard the gentleman from Oregon over there also stated this. Well, I just couldn't believe it. Twenty-seven years ago I was paying $2.25 a box for No. 8's light load to hunt birds with. Today, I am paying $3.67 a box for 12 gauge shotgun shell. That is just not that much of an increase, if any at all. But anyway, I said I'm going to try to see if this is true. I took it upon myself to call the President of Winchester-Western. He directed me to another individual there. I can't remember his name. I told him, I read to him from the letter from the Department of the Interior and he said that just isn't so. No one with our company has ever furnished this information to the Department of the Interior or anyone else because it was an outright lie!

I then called Remington up in Bridgeport, Connecticut.

I talked to their president. He directed me to someone down the line. I read the letter to him. He said, "that's incredible." He said "there is no way that a lead shot shell can ever begin to approach the cost of a steel shot shell. Whoever furnished you with that information didn't know what he was talking about." I said, "Well, I'm reading from a letter from the Department of the Interior stamped on the top of it and signed by some gentleman that is supposed to be working up there for them. He said, "he still just doesn't know what he is talking about. I don't care who he works for."

To make a long story short, I called Federal and Peters and all the rest of them and everyone stated that just was not so. I'll move on down the line as fast as I can and I don't know if Mr. _____ with the Department of the Interior or Mr. Yancey or Mr. Angelle or any of them have received the Remington News Letter but I have most of them. They send them down to me. The most recent ones, the one I am reading from now is from July-August, 1977, by Mr. Carl Beck and before I do, I would like to say that what I am trying to do is present the Commission with facts--not suppositions, not theories and not possibilities as I think the four previous gentlemen have versed. I really believe that and I talked to most of the Commission Members except Mr. Doyle Berry. I said that if I were given a chance I would give you facts and the only thing I ask that you do is ask the gentlemen that they present to give you facts and not theories and not suppositions and not possibilities.

On Page 2 of this report, the Remington-Arms says, "However, in spite of its problems, steel has inherent drawbacks. First, it is only two-thirds as dense as lead. As a result, steel pellets of any given shot size deliver proportionately less energy than lead pellets of the same size. Secondly, because it is harder it can't cause problems in barrels of shotguns. Thirdly, steel shot is more expensive than lead shot because the differential is now more than 50 per cent and that's not true. I'll guarantee it. You go down to Dailey's; it's 300 per cent because this was in 1977. Yet in little pamphlets you picked up outside the Department of the Interior, now I don't know where they get their facts and figures. Ammunition manufacturers estimate that steel shot loads will cost the waterfowler at least 50 per cent more than lead loads. You can read what Remington says right here in 1977 that it will be in excess of 100 per cent and you compare $3.67 a box with $11.95 and that comes up to be almost 300 per cent.

Next is from an article entitled, "A Steel Trap for Duck Hunters," by Drs. John Madson and Ed Kozicky and there I will read just one little brief excerpt from this article. On Page 74 and it's in Sports Afield. They stated, "We estimate that the total annual crippling loss in bagging the annual 10.6 million ducks would increase by three million birds annually. Now that's a hell of a lot more than what you save by using lead shot. Any way you want to look at it. Of course, in the past, when they had the House Interconferees Committee Hearing, thank

God NRA was there. I have copies for the Commission Members that I would like, if you would, Senator Gilbert, to pass down because the NRA was able to point out some very interesting sidelights and actual factual data to the House Interconferees Committee that the Department of the Interior, Bureau of Wildlife and Fisheries, I don't know if they overlooked it, they refused, or they just withheld it. They have been withholding all the way along and I don't see any reason why they weren't withholding that thing. The one that started all this was Professor Frank Bellrose and he will tell you today and, yes, I can make 3 or 4 calls to get his report and I'll find out it was not that much to it. Even he doesn't, will admit readily rather, that his report at the best is a guess. An educated guess. A good educated guess but it is not factual data. That is pointed out in this article. Now, Sanderson-Erwin report that the gentlemen proceeding me referred to, in their study, and by the way, it was contracted by the Department of the Interior, the Bureau of Wildlife and Fisheries. They took your tax money; they asked for the research to be done and asked for the report. They got it. It didn't give them what they wanted so they canned it. They hid it from the public. (loud applause)

And, that's pointed out in that article right there. On Page 3 of it, "of the 1,1140 mallards that were dosed with varying numbers and combination of shot and placed on three different diets, only 21 in all, only 21, died in all. Only 13 deaths were associated with lead shot poisoning. Now, I admit I majored in

math but that was quite a few years back but if my mathematics serve me correctly, that comes up to something like 1 per cent that they found, or maybe one and one-half per cent that they found that were dying from lead shot ingestion under controlled circumstances. Why did the Wildlife and Fisheries choose to disregard this. I don't know. It was your tax money. I'll say this because on the very next page and I quote, "The Sanderson-Erwin study was contracted by the U. S. Fish and Wildlife Service but was conveniently excluded from Interior's environmental impact study on the lead poisoning problem. That's not my words. That went into the Congressional Record. Why was it? That is the question that I would like to have answered. Why was it excluded? This is really something. It is the most amazing thing that I have ever turned up and why hasn't the Department of the Interior, Bureau of Wildlife and Fisheries, or our staff members here on our local Commission, furnish this fact to you up here tonight. I quote, "more recent," excuse me, gentlemen, to the very next page in the middle column the next to the last paragraph beginning with it, "more recent research completed in December, 1977, at the University of Saskatchewan dispells a United States Fish and Wildlife Service contention that ingested lead pellets in waterfowl increases the bird's vulnerability to other disease. The Saskatchewan research found that prior administration of lead, or lead iron, or iron shot did not increas- the mortality rate due to subsequent challenge with "pasterella multicide" (?), or whatever that is. It's some type of bacteria

that causes avarian cholera. The most devastating infectious disease of North American wild waterfowl. The report concluded that prior administration of lead shot decreased the mortality rate due to challenge with pasterella multicide indicating that birds with high circulating blood levels of lead may actually be protected from infectious avarian cholera. (applause)

Again I asked the Department of the Interior, Mr. Yancey, Mr. Angelle, Mr. Bateman, why hasn't this been presented to the people tonight? Why hasn't this been presented to the Commission tonight? I don't know. That's for you to decide, not me. Now, our ballistics expert from the University of Oregon. He got up here and told you that ballistically steel was as good as lead. I just want to ask you one question, was that your report in this last issue of Ducks Unlimited. I thought it was. I thought I had the right gentleman here. I just didn't have the name. I'm going to read to you from his own report. I'm going to give you the figures from his own report. Why didn't he give them to the Commission? He took a 3 inch magnum 12 gauge. How many 10, 12, 14 year old kids, or how many women shoot those? I can't. Do you compare the 3 inch 12 gauge magnum to a 2 and 3/4 inch standard heavy load lead? You want to see what his ballistics showed? At 40 yds., No. 4, 3 inch, 12 gauge, retained energy per pellet 2.02 on No. 4. That's a 3 inch magnum. You drop up to a standard 2 and 3/4 inch 12 gauge new lead No. 4, 3.91 retained energy. That is ballistically equivalent? Why didn't you give these figures to the department tonight? (applause)

If you read his article it is really revealing. His argument is that you replace a No. 4 with a No. 2 steel. Well, I'm not that smart but whenever I'm given a certain cylindrical object and I take one size shot and I take another shot twice the size, I think I'm not going to get but half the number of shot in that shell.

As I say, I might have to brush up on my math but I think that is somewhere around correct. Now what does this do to your pattern? What is the density of your pattern with a No. 2? How many of you out there have shot ducks with a No. 2? Let me see your hands. One, two, three, four, five, six, seven, eight. How many of you have ever shot ducks with a No. 4?

FROM THE FLOOR: Steel shot?

JUDGE LEE: No, lead. How about No. 6? I don't know how good a shot you are but by golly it is hard as hell for me to kill them with a 6 much less 2, but then the worst part of the whole thing is that I asked these Commission Members to take this into consideration. Really, truly, when you make this decision that Winchester, Remington, or none of the others are going to manufacture 16 or 20 gauge shells. That is a known fact. You know it. They know it. Tell the Commission Members that. He recommends that you use a 3 inch 12 gauge magnum which is still ballistically inefficient. My ten year old boy can't shoot a 3 inch 12 gauge magnum. My wife can't shoot a 3 inch 12 gauge magnum. My fifteen year old son can't shoot a 3 inch 12 gauge magnum, and I wouldn't have one if you gave it to me.

One other thing that I want to present out of this to the members and I'll read it to the audience. This is off the Western steel shot box. "Caution." I'm reading verbatim off this right here. This is a xerox copy off the end of the box. "Caution. The use of steel shot may cause barrel damage in some guns while the shotgun is designed to reduce or eliminate this tendency, we assume no responsibility for damage resulting from the use of these shells. No. 2. "Steel shot will ricochet. Do not shoot at flat surfaces or water." How in the hell are you going to kill a cripple? No. 3 "Do not remove the steel shot for use in reloads." Winchester, Remington, Federal, Peters and all of them will tell you, Mr. Roster, that they recommend that you do not even attempt to reload steel shot because it takes a special high-priced primer. It takes a special powder because they have not yet found the right powder to burn efficiently to attain the retained energy needed for a pellet to kill ducks at 40 yards, much less 45, 50 or 60. No.4. You all laughed when this gentleman said this a while ago. "Exercise care when eating game as steel shot may cause tooth damage."

I have a few presentations here that I do want to make to the Commission when they take this under consideration. I wish they would vote tonight but evidently they are not. No. 1 is from Representative Carl Gunter. He couldn't be here tonight with us. We are having a little get together for Representative Leach up in Alexandria. He's running for Congress and I know

that we will have one more there when he gets up there to fight the Department of the Interior on this. You can be sure of that. He asks that this Commission not implement steel shot that they reject it totally. I also have a certified copy of a resolution from the Rapides Parish Police Jury asking that the Commission Members not accept this recommendation. I have a letter from the Central Louisiana Quail Hunters Association and, believe me, the members of this Commission or some of the biologists have heard from them before, asking that this Commission not implement it. Also, I have several thousand names on petitions that were obtained in a very short period of time. You see, the way they generally operate goes back to when Mr. Yancey called Mr. Greenwalt up in Washington when they found out that Congress had passed this or failed to refuse to fund. They had the letter in their hand; it was mailed, or the telegram was sent on October 3. It was received by the Department of Wildlife and Fisheries of this State on October 4th. It was withheld, any knowledge of it was withheld from these Commission Members purposely until late Monday afternoon when they were in session and Greenwalt and Yancey tried to cram this thing down your throat. Well, gentlemen, I'll tell you I don't appreciate it one dad blame bit. That's our tax money that pays their salaries and I think they ought to be responsive to the people of this state. (applause)

I'm an elected official and I know, by God, I have to answer to my people a lot better than that but that is the way they act with us from the very inception. In fact, I call it

the immaculate deception. Senator Gilbert and in all sincerity I ask that these members do take into consideration not only the mature male hunters of this state but there are a lot of children out there. There are a lot of children out there, gentlemen. My boys have been on that lake hunting since the age of 8. All three of them, and I tell you it irritates me. It upsets me to think that they would impose such a restriction and take away that God given right from these kids. I handled juvenile court there in town and I have yet to have a kid in my juvenile court that hunts ducks on Catahoula Lake. As for that die off last year, I stay on that lake, Mr. Bateman. I run my airboat up and down it all over the place and you know its amazing how I didn't see all those sick and dying ducks out there. They just weren't there. Now, I'm not going to say that you didn't pick up some dead ducks or that you did pick up some dying ducks and I'm not going to be the one to stand up here and say that ducks don't die from lead shot ingestion. I'll be the last to say that but I'll be the first to stand up with you when you come up with a proper solution and, by golly, I'll go to bat as hard with you as hard as I have against you. Thank you.

CHAIRMAN DOYLE BERRY: Thank you, Judge Lee. Senator Don Kelly. I don't know how you are going to follow up after those two guys.

SENATOR DON KELLY: Well, I'm supposed to be an arguer; I'm not a facts man.

For the record and I assume this is for the record, I'm Don Kelly. I'm from Natchitoches, Louisiana. I represent Senatorial District No. 31, the second largest geographical Senate District in the State of Louisiana which includes this area surrounding Catahoula Lake, Rapides Parish, Grant Parish, Winn Parish, Red River Parish, Natchitoches Parish, and on and on.

You know, first, this thing was all set up. It's wrong basically, I guess. He talks about a public hearing. I want to welcome you to the United States of America, State of Louisiana, versus the duck hunters of the State of Louisiana. That is what it sounds like.

Judge Lee has brought out some very interesting facts. Thank goodness, he and the gentleman from Shreveport were here with such data. You know these experts and that is about what it amounts to. Just according to how many you can get and how well you play it. It so happens that the duck hunters of the State of Louisiana don't necessarily have people on the public payroll. It takes gentlemen like that guy from Shreveport, Judge Lee and all these other good folks and there will be many more up here who will testify tonight that have gathered this data for you. They are your experts. I have no expertise in the field.

The gentleman earlier mentioned about the two ducks limit, the four duck limit. That's about when I gave it up and I went to the 7 MM Magnums and the 2-43's and all that. I might

give you some ballistics on that but not on shotguns. Duck hunting got to be a disordinate problem.

CHAIRMAN DOYLE BERRY: Excuse me, Senator. The chair would like a little quiet in the back, please. Would you ask those making noise to please quiet down. Go ahead, Senator.

SENATOR DON KELLY: I think what the main end of this meeting was and I was hoping that the federal bureaucracy and the state bureaucracy would present facts. They would be present and present those facts and not try to present a one-sided story. I can't help the fact that I am a wee bit disappointed here tonight as a result of the facts that have been displayed. If our Louisiana Wildlife and Fisheries Department primarily made up this program, I'm a wee bit disappointed in that, too, because in the first place, these weren't facts really that were related to you in this film, nor the testimony. These were conclusions that were given to you. In other words, you can set out with any premise and say, "we're going to accomplish this in the State of Louisiana and give me four or five of these experts that you pay real well and I'll get you enough facts to substantiate it." I'm afraid that we have fallen for all of that here tonight. It disturbs me. I'm disturbed for the fact that some of these gentlemen that Judge Lee mentioned were not invited here tonight by the Louisiana State Wildlife and Fisheries to help present some of this other data. As far as the federal government is concerned, they lost their battle in Congress. As a member of the Louisiana Senate and the

Louisiana Legislature, I'm not particularly keen on inheriting your problems down here. I must disagree to one extent with Senator Knowles. Senator Knowles said you had some troubles. Well, let me tell you something. While I have been in the Senate I've had a lot of tougher ones than this. I wish this was the hardest one I had to vote on because I think I know where the sentiments of the Louisiana hunting public are and it is quite apparent here. The gentleman who spoke in favor, I believe from the Baton Rouge area, of the steel shot was very concerned about what the Feds are going to do. I tell you and I'm very serous about this because if any of you out there are sand haulers and everything else, I'm up to here with the federal government coming down here and telling us that if we don't cut this out and cut that out, we would go along with what you say. (applause)

I have seen the United States Congressmen turn every power and every function and every duty that they have got over to a federal bureaucracy and low and behold as long as the good folks up there in North Louisiana, people that elected me, I'm not prepared to do it right now and give it to people within the state. I'm the guy that's got to go on the ballot and I'm the guy that is going to end up pulling with you in making some of these decisions. You know the main thing that strikes me, not being a ballistician. I guess that's a fancy way to say it, that is, being a real expert as far as lead ingestion of ducks. I think I can relate one thing to you and that is the cost factor

to the State of Louisiana. You know, Commissioners, if you didn't do anything else. If you just refused to act. If you refused to go along with this, you've got one valid reason and that is because they can't even figure out how to make the shells according to the way I hear the testimony here today. This thing has been going on for eighty or a hundred years. They found their charts on Catahoula Lake, Big Ben, kill in 1930 up there. It's been going on for years. Let's get this thing perfected. Let's don't jump just because the federal government can't get their Congressmen to jump and they come down here and want us to jump. Let's don't do that. Let's see what they can do with the cost. That really concerns me. This really concerns me. This cost factor to the people of this state. You know when you start paying about $13.00 or more for a box of shells, that is the first step toward outlawing it all and you all know that too. We do this to our hunters and we will find where we don't have any hunters at all. Well, my good friend, Dr. Glasgow, who doesn't really know me but I knew a lot of his students. Some of them were at L.S.U. while I was in Law School and they were trying to get a master's or doctorate degree under him. I'm not concerned what the judiciary does either. Until the Legislature or this administrative body pronounces some type of judgement on this particular issue, the courts have no business coming in and saying what we are going to do. Congress hasn't passed a law and we have to remember that. Congress hasn't passed a law and I mean this isn't for the judiciary.

Dr. Glasgow said he was afraid our citizens were going to be fined. They were going to end up fooling with the duck hunters and they were going to be knocked out. I'll tell you what. They are not going to get Judge Lee and Ben Johnson in Alexandria. That's quite obvious. To get any type of judicial commitment you have to have something to hang your hat on. We don't even have a rule unless this Commission here, which I hope you don't, pass some type of administrative order. They don't have anything to hang their hat on. The Legislature is not in session. We can't be blamed for that and, gee whiz, I hope you don't because I know what's going to happen then. We are going to have a real confrontation come April, 1979, and also the legislature and the budget committee.

I want the people in this state and I want the people in government, including myself and you Commissioners, and I'm asking you here tonight to start considering the people of this state. Now, I've stopped worrying about statistics and what the feds are going to do. Let the feds do what they want to do. If they mandate us to do something, that's different, but until they do--they can't make up their own mind--let's just don't jump at that old bait that has been put down here before us. I sincerely ask in behalf of all the constituents and I must say I have not received one call in favor of steel shot and I ask you in behalf of a five parish area in central and north Louisiana not to impose this steel shot business on us this coming year. Thank you.

CHAIRMAN DOYLE BERRY: Thank you, Senator Kelly. Senator Ned Randolph. Would you please come up here at this time.

FROM THE FLOOR: He had to leave.

CHAIRMAN DOYLE BERRY: Mr. Henry Bernard, President of the Wildlife Federation.

MR. HENRY BERNARD: Chairman Berry, Members of the Commission and Secretary Angelle.

I'm coming here tonight to bring you some thoughts and reflections from the Louisiana Wildlife Federation concerning the controversy over the enforcement of the steel shot regulations. The Louisiana Wildlife Federation met yesterday in Alexandria and this issue was thoroughly and rather lengthily discussed at that meeting. As a result of this discussion only one thing became perfectly clear that unanimity or even a real consensus of opinion of this subject was virtually impossible to achieve. Rather than take one position at this hearing as our majority position and then have you possibly bombarded by a substantial number of minority opinions letting you know this was not their particular opinion, we felt it was better to let you hear from the news, clubs and individuals. I don't think a lot of those views have been heard yet. Possibly, if further time goes on some of the clubs that are here you may hear from them. Some observations and reflections can, however, be made by me personally. In my capacity as President of the Louisiana Wildlife Federation for the past year and a half, I think that I,

too, have had the ability to somewhat come to feel the pulse of the concerned Louisiana sportsperson--the duck hunter and the non-duck hunter alike. I would like to share with you some brief observations that come from me presiding over the state organization. I've been the President of the Wildlife Federation for a year and a half now and I have also been as you gentlemen must know, involved in Federation and other sportsmen's activities and works for a period of some eighteen years now. I'm a sponsor in Ducks Unlimited. I'm past area champion of the New Iberia Chapter of Ducks Unlimited. I think that it can't be denied and I wrote this before I came to this meeting that it is clear that a substantial majority of the duck hunting population of the State of Louisiana vehemently opposes steel shot.

A lot of these opponents are intelligent, informed, good faith opponents on the steel shot issue. Many oppose it through blind prejudice and lack of information or real facts. I'm not going to again belabor you with all the pros and cons in the arguments that you have heard already and will hear again but I want to set forth a few points for your deliberation and consideration. I do think that you are, as some of the speakers have said before, making one of the most important decisions that this Commission has ever faced in the State of Louisiana. While very many Louisianians oppose steel shot there are a great number that recognize that the existence of the lead poisoning problem is apparent. It is real and eventually must be faced up to. If it isn't faced up to voluntarily, this will only add

fuel to the already burning fires of those who seek to destroy our rights to hunt ducks.

Most of us don't want our hunting rights decided by a court system because we have a much greater faith in you than in any court system. Steel shot as presently mandated by the U. S. Fish and Wildlife Service is filled with inconsistencies and inequities. The expense of the 12 gauge only use of lead and lead in the 16's and lead in the 20's, the crippling issue, the validity of the hot shot approach. Every hunter, even those who favor steel shot recognize all these substantial and critical problems. The issue to be decided by you for Louisiana is not the relative merits or demerits of the use of steel shot but rather is it better for Louisianians to accept an admittedly imperfect and perhaps fitule effort to attack its own problem, or is it better to refuse to make an effort to solve the problem until a more acceptable or perfect solution can come along. This decision cannot be made in a vacuum. No man is an island unto himself. Neither can Louisiana adopt an isolationist attitude but we must also consider the outside attitudes and pressures in making this decision. Gentlemen, we in the Louisiana Wildlife Federation envy you not in having to make this choice. You will be severely criticized and denounced however you decide but we publicly express to you our sincere appreciation for your efforts on behalf of the Louisiana duck hunters.

I must speak for the professional biologists. I must speak for Mr. Yancey, Mr. Bateman and other members of his staff.

I heard a lot of comments here. I think many of those comments are made out of anziety and out of emotion rather than out of fact. I want to stand here and publicly say that in the many, many years that I have had the opportunity of seeing many things come and go. How many of you duck hunters out there remember ten years ago when Mr. Bateman and Mr. Yancey came to us for three consecutive years running and telling us about something new and strange called the point system. Who opposed the point system for three and a half years? I'll hold my hand up. How many of you gentlemen out there have the courtesy and integrity to do the same thing and recognize how much you fought the point system. How much you fought these people and now you are going to say what a great system it is. I remember that battle for three consecutive years and Louisiana Wildlife Federation's sporting organizations all over the state. I remember similar battles over the issue of gill netting. You know, speckled trout and what have you. I have a great deal of respect and admiration for the staff and I think the Louisiana Wildlife Federation continues that respect and admiration. There are a lot of questions and a lot of problems and I think we have to give people the good faith to have the ability to have different opinions. I remember six years ago, seven years ago, eight years ago, ten years ago, a small group of people in Louisiana went around telling the nation about something called "short stopping." You did some clapping about it earlier. You know we all talked about short stopping back then and what did

Missouri tell us. "Bunch of damm sour grape Louisianians because you are not getting to kill all the ducks." But what did we tell them--about changes in the migratory patterns and who? who? but the Louisiana Wildlife and Fisheries Commission biologists mentioned the strange little thing called "duck viral enteritis" and kept saying if you keep all that corn up there and you pump all that hot water in your little bittie ponds, you are going to have something break down and it's going to kill thousands of ducks--it's called "duck viral enteritis." I don't like the Feds either. They laughed about us. They laughed at duck viral enteritis. They said, "you are a bunch of idiots", but you know those same people, what happened in later years. Boy, were they ever proven right! They may be wrong this time, gentlemen, and you have a terrible decision to make and I think a hard one to make. I hope some of my comments have helped bring you my personal attitude, our Federation attitude, and some of us, but I hope that whatever decision you make, you make it in the right for the integrity and the work of these men. Try to furnish information to them. They may not always be right, maybe we don't agree. You have a hard decision. Thank you, gentlemen.

CHAIRMAN DOYLE BERRY: Thank you, Mr. Bernard.

MR. BILL DAY: Mr. Berry, Mr. Wille, other Commissioners, Mr. Angelle, ladies and gentlemen. I am a Ducks Unlimited sponsor, too. I'm also a past president of Rapides Wildlife

Association. I'm past director of the Wildlife Federation and I am a substantial contributor to the Louisiana Wildlife Federation. I, too, Mr. Bernard, have been involved in a few environmental fights and some of them rather successful and some of those, of course, greatly with the assistance of the Commission and the assistance of the Governor. I listened to some very dissappointing things here this evening. I was made aware of what appears to be at that time a little "inter-mouth" play at the last Wildlife and Fisheries Commission Meeting in an effort to have a vote on this prior to the opportunity of the people who pay for this to have a say. I do not wish to track one iota from the effort of these men on this Commission and Mr. Angelle, Mr. Yancey, or Mr. Bateman or anyone else. They have served well and I appreciate it.

Burt, I want to tell you that I thank you for the crab that you sent me.

MR. J. BURTON ANGELLE: At least I see you are still alive.

MR. BILL DAY: The question first that comes to my mind is a little film that we saw here tonight. They opened the gizzard to see the lead poisoning which we saw a little scene of that where we saw little fragments of lead. Conclusive evidence that was all that was needed but yet the head of this outfit says"absence or presence of lead shot is not diagnostic." Now it would look like these little problems the Department of of the Interior on something that simple could get their act

together. They have not. It's one of the minor points involved. I dare say this, very few people in the world in whom I have more respect than Dr. Leslie Glasgow and I do know that he is a duck hunter and I do know that Dr. Glasgow has every concern and every right. I have much greater concern for the fact that as Judge Lee pointed out he has one young man who is a football player and a couple of young ones. I don't. I have two daughters and both of them like to shoot. They can't shoot if we have magnums. I won't let them. My wife is 5 ft. tall and weighs 120 lbs. She really has no business with a 3 inch magnum 12 gauge. I don't either. The figure that is used by certain ballistics experts and I do want to get to that. I want to get into the ballistics of this. We consistently hear talk about ducks shot at 30 yds. Now, there's only one man here who has been bogged up on Catahoula Lake. This is a hard-bottomed lake as Mr. Bateman showed us. Right now, of course, Catahoula Lake has a harder floor. Of course, we have had four months of draught and it is totally dry and clay does bake hard but when it gets wet, if there are any Chee-Chee birders here, or Sierra Club members, Audubon Society, or Friends of the Earth, or any of the rest of you from the Department of the Interior, or you, young man, that would like to travel across Catahoula Lake, I'll be glad to let you follow me in an airboat. You won't, if you get me right. Catahoula Lake happens to be one of the real mitmers of geology in this country and we are stuck with the steel shot area and in one of the most inexplicable things that have ever

happened. We have had the Corps of Engineers dig ditches through the middle of Catahoula Lake so that it could immediately be watered through a big canal that goes through the middle of the game management area and, incidentally, is the cause of many people to feel that the lake is dying--another lake. We are able to raise the water level on Catahoula Lake twenty feet almost overnight and Mr. Bateman has been quoted as saying that mallards dive in 18 to 20 feet. I'm sure they do on occasion but most of them are diving ducks. Not being a biologist, I couldn't tell you. I can only tell you what I see. Now maybe they do dive to the bottom in 20 feet of the lake but I thought that's what canvasback and stork did and in that case I suggest that we extend the steel shot zones to the coastal and west Texas. We don't want to leave them out. They do that now, the canvasbacks do, the diving ducks, as we know them, the gadwalls, we thought stayed in shallow water. We sneak out on the lake when it rains but Louisiana Wildlife & Fisheries Commission, the U. S. Corps of Engineers, the U. S. Department of the Interior saw that it was immediately watered after the duck season and a great deal of water was put on it, 20 ft., so that we don't have ducks feeding on all that ole nasty lead. Now lead has a rather high specific gravity. I'm not a ballistics expert either. I am a journalistic major though and I did go to Columbia University at New York a few years and I write a few things. I don't pretend to be a ballistics expert. I read what the shotgun companies put out and make decisions based on that.

I feel they are in the business and they know what they are talking about. I did not shoot steel shot last year at ducks. I shot lead shot, a 20 gauge gun. I crippled two ducks and put the gun down and ended my season. I don't care to cripple ducks. I don't want to cripple ducks. I don't care to see what happens with the steel shot because there are hunters that use steel shot and we cripple ducks.

Now maybe they don't know what short shot strings are but some of them are pretty darn good shots. Some of them bring 25, 50, 100 on skeeting range consistently. Another thing we have not been told until tonight is that we are going to have to go to some place and have the chokes ringed out of our guns and go from full chokes and modifiers to an improved cylinder. We are being asked to hunt ducks at 60 yds. which is a normal Catahoula Lake range. In fact, that's close. That is rather very close as a matter of fact. We hit at 30 yards. That's about half the normal shooting distance at Catahoula Lake. There are many blinds on Catahoula Lake that start defending the decoys when the ducks are 200 yards out. I also hunt bean fields adjacent to Catahoula Lake. There is exceptional land there. If there is any place that needed steel shot implementation it would be the bean fields and rice fields. Where there is only a shallow pond and a covering of water and attracts a great number of waterfowl. Perhaps many of you in this part of the state are not aware of the fact that our bean fields hold hundreds of thousands of ducks because they are not surveyed but nevertheless

they are there. Catahoula Lake acts as a receptacle for these ducks and they spill over into the bean fields. There the ranges are somewhat shorter about 50 to 60 yards but they still require 5 shots.

We find too that many of you I'm sure know John Paul Crain. I know you know of the hard bottom of Catahoula Lake. Well, it is hard right now . In a couple of weeks when we get some water on it, well, that's another thing. The grass is dead out there and many areas of the lake because of the draught. We have a superior food crop this year. One match or one dropped cigarette and it will all be gone in just an instant. We have a severe and critical fire danger. If there is any way to momentarily water the lake and damp it down somewhat we might have something left but right now in people's minds it's going to happen. It is not a matter of guess, it's a matter of when. We are going to lose every bit of food on that lake if we don't get some water on it right now. Water it off; it won't hurt it. We have our state university and lots of people in our Extension Service that know about pastures and I'm sure that they would be glad to advise you. It's a critical thing and it does need your attention. As far as the ballistics on these shells, I don't have any argument with what Dick Lee said. I don't have any argument with what Madson said. I don't have any argument with some of my friends in the Remington Arms Company told me. I don't have any argument with Jack Lennox who was 6 times a member of the U. S. Skeet Team and has been on the Remington

staff for many years has told me about steel shot. That's all been said and will be said again.

I do have some letters and petitions here that I would like to present. One is from Doyle Windham who is the Sheriff of LaSalle Parish. Mr. Gilbert I'll ask you to give this to Mr. Berry, if you would. I promised my people I wouldn't read the individual names on these petitions tonight. There is another one from Judge Edrington who is concerned. Here is another company, President of the Soil Conservation District in Central Louisiana, Jerry P. Kaiser. Here is another notice from the LaSalle Parish Police Jury that they have passed a resolution requesting you people not to implement this order. There is another one presented with 29 names of just plain blue jean duckhunters who can't afford to pay the price of the shells. Here is a little petition from Alexandria with 48 names on it. Here is one with 132 names on a petition from the Police Department and Fire Department of the City of Pineville. Here is a petition requesting that you oppose the use of steel shot in this state. Dresser Industry employees. This petition has 168 names. Here is another one from just plain people out in the country with 18 signatures on it. Here is one from the South Central Bell Telephone Company employees with 31 signatures on it. From the Hanna Ford Company and they must have their people all stirred up--there are 60 on here. There are 22 on this petition and there are a couple of letters. One from a Dr. Heath in Alexandria that I'm sure you would like to

have and there are two here that I would like to quote from briefly. This is from a man I don't know. I'm not in the business contrary to some opinion that may be floating around the room that I ask people to write letters. I don't. It says, "I'm very much opposed to steel shot! I'm very much opposed that you single out our section of the state for its induction. I'm very much opposed by the under-handed method you use in trying to slip things by your fellow Louisianians who you are supposed to represent. The Wildlife Commission are the last people I thought would try to rip off the public, but now I advise the people to look more closely into your policies to see where you stand on other issues." This was from a Mr. A. A. Flournoy.

Here is another letter, gentlemen, then I'll close. It reads, "Dear Mr. Day, I know that you will deliver this letter to the Wildlife Commission. Steel shot use in Catahoula Lake and a few other places is stupid, unfair and called commonly a farce. I am against steel shot anywhere, anytime. The common working man does not get the same treatment as do friends of the Commission or game wardens. They don't seem to realize they work for us or do they? I find it impossible to believe that everyone has the same idea on all matters. Louisiana's hunters--mainly common people--don't want steel shot, can't afford it. Someone is doing a hell of a job trying to raise license costs and set up screwed-up laws and then turn

their faces on their friends and decide the law is below them. I am against Steel Shot and resent the fact that the Commission tried to run an "end around play." Typical of them. Steel Shot - No Way." End of the letter.

Now gentlemen I'm sure it makes no difference to you whatever, no difference whatsoever, whether I am a duck hunter or not. If I am required to use steel shot and if I am required to cripple more ducks than I kill, I'll quit duck hunting. I think that much of the birds. Thank you.

CHAIRMAN DOYLE BERRY: Thank you, Bill.

Dr. Broussard. Is Dr. Broussard here. (no answer)

Dave Hall, U. S. Fish and Wildlife Service.

MR. DAVE HALL: Mr. Chairman, Members of the Commission, and ladies and gentlemen.

For those of you that don't know me, I'm Dave Hall. I work for the U. S. Fish and Wildlife Service and I am a Special Agent in charge of Law Enforcement Division for Louisiana, Arkansas and Mississippi.

I think the issue is the enforcement of the steel shot regulations and I won't be long because I think most of everything that could be said has been said here tonight but I do want everyone in this room to know that we did not, the Law Enforcement Division, attempt to enforce the steel shot regulations over any other regulations. The few cases that were made in this state were mostly in conjunction with other violations where it was obvious that those who were hunting did not intend

to adhere to any regulations. There were a few cases made and we attempted to get what we call "voluntary compliance" even though it's obvious that most of you objected to the steel shot regulations, most of the duck hunters did comply with them.

There were some comments made about the agents of the Wildlife and Fisheries Commission spending much time on the enforcement of the steel shot regulations and I am here to tell you that we work in close conjunction with Mr. Angelle's agents. They did not emphasize enforcement of these regulations over any other regulations. I had sort of a lengthy presentation, but I am going to be brief.

I must say, like Mr. Bernard did, I was in Louisiana as an agent in the field ten years ago when there was a tremendous controversy between the Fish and Wildlife Service and the State of Louisiana over the setting of the seasons and bag limits. I witnessed what was done for you hunters by the people in the State Department. I can tell you that Mr. Richard Yancey and Mr. Hugh Bateman are instrumental in you people today having a bag limit and a season that I think all of us are proud to have. I am not going to side pro or con with what was said about how this meeting developed but I can tell you that I have worked with Mr. Yancey and Mr. Bateman and I have the utmost respect for them. They have been the most competent biologists that I have ever dealt with and I know that they would never try to do anything against the duck hunter, as some of the speakers

have accused, because they are people that have, I think, wisely represented you as duck hunters. Whatever decision is made, I think as Mr. Bernard said, this will probably be one of the toughest decisions this Commission will ever make. I would hope that they would support the enforcement of the steel shot regulations not because my agency and because I, as a law enforcement agent, want another regulation to enforce. I think the problem of lead poisoning is serious and we must as hunters demonstrate whether we are exactly right, how we do it, I will agree there are inequities, such as, the cost of ammunition. I agree with all this and I, as a duck hunter, feel the same way but I think this is one way we can demonstrate to those who would oppose hunting in general that the hunter is willing to make a sacrifice. If you have to give up a few yards on your killing range or whatever, it may be we must demonstrate that we are willing to make sacrifices in order to perpetuate duck hunting. I think that if any of you people have observed the "Guns of Autumn" program and some of the other television programs, realize that there is a real effort to attack hunting in general. I also feel that the support of the Fish and Wildlife Service would demonstrate that Louisiana does not intend to go back to those years of controversy where we had low seasons and low bag limits. I am not saying that the Department would use this as an excuse to try to reduce the bag limits but I can tell you that we have the best working relationship today between the

Louisiana Wildlife and Fisheries Commission and my bosses and superiors in Washington than we have ever had before and Mr. Angelle, Mr. Yancey, Mr. Bateman, Mr. Soileau, and many other technical people here tonight are responsible for that. Thank you very much.

CHAIRMAN DOYLE BERRY: Thank you. At this time the chair is going to call a ten minute recess.

CHAIRMAN DOYLE BERRY: Mr. Buckley.

MR. CHARLES BUCKLEY: In the interest of time, I will just pass these petitions to you. These are not solicited petitions as you will see when you read them. Just a bunch of people who are quite interested in opposing steel shot.

I also have a letter from Catahoula Lake Conservation Club signed by President Pete Thompson opposing steel shot and, again, in the interest of time, I won't read that letter. I do have a couple of reminders that I wouldn't feel right if I didn't bring up. First, just a comment on the last speaker, Dave Hall, of whom I have a great deal of respect for. He had suggested that possibly we should go with steel shot just to show that we are willing to make an effort to correct the situation and, in all honesty, I can't see how we can accomplish anything by going for something that the only reason you oppose it is we think the steel shot is more destructive of the waterfowl population. As the man said, he would quit shooting ducks if he had to use steel shot. If it is destructive of the waterfowl population, we can't accommodate them by suggesting as a good

will measure that we add to that particular destruction. I think also that it is quite similar to saying, "Let's go for a simple gun registration law" just to show them that we believe in one another. Not too many here would buy that but if the President holds to the quality of clubs in Central Louisiana that are interested in waterfowl. I know of no hunters and this has been expressed by our representatives of no hunters in Central Louisiana consider steel shot a satisfactory replacement for lead shot. Many of them are dedicated conservationists, sponsors in Ducks Unlimited, and you could assume with support any measure that would increase our waterfowl population invariably and through their personal experience they are convinced that the crippling factor of steel shot is much more damaging than any lead poisoning problem.

We are told that steel shot is a satisfactory replacement for lead shot, but hunters spend large amounts in this sport and should not object to a few additional dollars for a box of shells. Lead poisoning is a very serious problem that could be eliminated by the use of steel shot. If the above is widely accepted as fact, it appears most unusual that the use of steel shot would be confined to a few isolated areas in Louisiana while thousands of hunters utilize Catahoula Lake and, consequently, deposit more lead shot in that body of water. Hundreds of hunters would utilize smaller bodies of water and it could be assumed on a percentage basis similar amounts of lead poisoning

would be created on such bodies of water. It is not realistic to assume that Catahoula Lake with such a high firm bottom and I have crawled out there on my stomach many times and left boots in it. It's unique in its ability to retain lead shot. If lead shot and steel shot are comparable they would have good reason to eliminate steel shot in isolated areas. Now, minor lead shot problems generally are created during the split of the waterfowl season which is the only opportunity large numbers of waterfowl could feed on duck ponds in that area. The lake is flooded immediately after the season. Now Commission biologists continue to support . . . which brings in a question of sincerety in correcting the lead shot problem. One of the slides shown earlier mentioned 468 tons of lead deposited in Louisiana. Four tons of that is shown as deposited in Catahoula Lake. That's less than 1% of the lead you have in Louisiana and yet you are trying to correct the steel shot problem. Problem by going another year with our steel shot regulations.

On the same slide, first lead poisoning has been shown in 11 yrs. for the last season. The last season was the first year that we had the steel shot regulations on Catahoula Lake. If you go back to the previous lead poisoning on Catahoula Lake you are going back before we had the diversion canal, before we had these structures that were supposed to correct and eliminate the lead shot problem. We talked about the ducks we can't see and ducks that pick up lead by feeding on that lake at the time

we had those lead shot problems. I don't know if it was lead shot or what it was. Something was killing a lot of ducks. We had a number of sick ducks back in the periods you mentioned earlier here was on Catahoula Lake. At that time the hunting was poor. I could send my lab out and bring back a limit of ducks for three persons just by picking up cripples. I had some poor days last year and that lab hasn't found a single cripple walking. When we had lead poisoning on Catahoula Lake you didn't have to look in isolated places; you could see them. The hunters on Catahoula Lake just aren't observing all these lead poisoned ducks that the biologists have been able to find. I'm not suggesting they haven't found them but I'm suggesting that when we have lead shot poisoning problems on the lake it was readily observable. You could see them. I'm not advocating certain universal use of steel shot because I believe that in its present state of development it is more damaging than the problem it is designed to correct. I am stating that steel shot is ever proven to be beneficial to waterfowl, that there could be no sound reason for restricting its use to certain areas. The steel shot is universal in Louisiana, this meeting in Lafayette would be unnecessary. Support for that ammunition would be so limited that the item would never be placed on the Commission's agenda. Thank you.

CHAIRMAN DOYLE BERRY: Mr. Tom Grenow from Lake Charles. Mr. Richard Gibson. Mr. Ken Tumminello, Mr. Mike Demuir from Lake Charles. If you have not heard your name and wish to be

heard tonight, please raise your hand and we will put your names in. Mr. Berry Dart from Lafayette. Mickey Fournet. Jerry Demarie. Ed Villier, Lafayette. Liz Tauzin. John Hennington, Lafayette. George Couple from Lake Charles.

MR. GEORGE COUPLE: Mr. Chairperson, Members of the Commission, Mr. Secretary, ladies and gentlemen.

I have a prepared statement and I am going to give it. Some place along the line we ended up with lead poisoning. My first introduction to it was on the Dakota prairies in 1946. It had something to do with my going in and taking a major in biology. I don't claim to be a biologist, per se, but I have been trained. I took a duck in and had it tested in North Dakota State and I found a number of others in the grain fields of Dakota. I was with Uncle Sam for 20 yrs. as an infantryman and I had a chance to hunt various parts of the country and in various parts of the world. Out of the eleven states that I have hunted ducks and geese in, I found lead poisoned birds in 8 of them. I found them in Europe. The only place I didn't find them was in Southeast Asia where the rank and file were not permitted to hunt. They had no guns. They had no ammunition. Even if they had, certainly we would have found ducks when we were sport hunting. Now regardless of some of the reports that have been cited tonight, Sanderson-Erwin in particular, not claiming lead poisoning under that particular given study. If any of us go into any of the statistics and go behind

the study, that study is under rigid conditions. Rarely do the conditions match what we are going to find in the wilds. We just don't have that opportunity. If there are some thoughts presented tonight that in effect said forget court action. It can go on. New Jersey did that a couple of years ago. They lost most of their steer herd in its swamp areas. They are having a fantastic job now trying to rebuild that herd.

There is one comment that I thought tonight that made some reference to the chain reaction that goes on in the predators that prey upon these poisoned birds. Now there are the raptors, or the pos, pos birds, the eagles, or there are the mantles. Basically, the first thing eaten out of anything in the wild, they go for the internal organs. Now we have known for many, many decades that there is such a thing as lead poisoning. We have had to eliminate it from paint because of what it has done to our children. There is good reason to believe that probably the loss of the Roman Empire was due to the fact that only the rich could afford the lead goblets to drink their wine out of. It creates a certain type of impotency, even if it doesn't kill. Well, one of the things you want to look at is what we have gone through with DDT and look at what it has done within the entire structure and chain. Many of the humans are picking up some poison. We are finding out we are being bombarded and those that are working in the shipyards in World War II, thirty years later, you had better go in and check to see if you have

lung cancer. We don't know all of the answers that go into some of these things. We do know that the court action that can be taken against us can stop the hunting. It's been done in other states. There has been a great deal of effort that has gone on. Maybe we should give it some thought. I would like to leave something behind me. The best we can for those who are going to follow us. Now everything that I have heard tonight has been pitched in--pro lead, pro steel. Obviously, I'm pro steel at this stage of the game. This is one of the things that we can do to mark time until we can get additional information. If my information is correct, I believe this Commission does have the prerogative of accepting steel shot with exclusions. Now there are some areas that possibly should be excluded until further study is done to them. The State of Louisiana and I think probably some of you are a little more aware of the law than I am and can give some information in this area. Something that I do want to leave and that is your prerogative and I request the Commission to look into the exclusion thing if this is going to happen by the way it's going to be done but I don't want to see our state left out. Thank you.

CHAIRMAN DOYLE BERRY: Mr. Wynn Hawkins, Lafayette. Mr. Hilton Dupont. Mr. Doug Holland. Mr. Hall Bethridge.

MR. PECAN: Ladies and gentlemen, I'll make this very short. I've been hunting for a good many years and

I would just like to give my support to the wildlife biologists. I believe what they have been saying. I think they are doing the right thing there, the professionals. I'm sorry I don't have a lot of political friends and that I could come up here and give you petitions and say this politician was for this, he is against steel shot. I'm for the biologists. I believe in what they are saying. That's all. Thank you.

CHAIRMAN DOYLE BERRY: Thank you, Mr. Pecan. Mr. Mike Hungair, please, from Lake Charles. Mr. Ernie Sonnier from New Iberia, representative from New Iberia Rod and Gun Club.

MR. ERNIE SONNIER: Thank you very much. The general membership of the New Iberia Rod and Gun Club held on Tuesday, October 17, of last week, the issue was much discussed. We camp up with no decision, either for or against, just like Mr. Bernard, also on the Board of Directors of the Louisiana Wildlife Federation. We could not come off with a decision there either. The sportsmen are, I might say the conservationists and I look at the New Iberia Rod and Gun Club as a conservation organization, very much want to go the side of the steel shot. That was undoubtedly the feelings of the New Iberia Rod and Gun Club members. The problem is in the implementation. They cannot buy it the way it is so the general feelings of the members of the New Iberia Rod and Gun Club is "let's wait and see." Maybe we could still go to it next year. I think there is a lot to be solved before we can accept this as it comes down. Thank you.

CHAIRMAN DOYLE BERRY: Thank you. Mr. Hilton Dupont, Jr. Mr. Robert Camp, Baton Rouge.

MR. ROBERT CAMP: I'm just a concerned sportsman. I don't have anything prepared here. I just wanted to say that I have been using steel shot for the last couple of years on Sabine Refuge and I have no complaint. I have had a lot of luck with it, even on geese. I tell you the ducks are dying from ingested lead and that's proven fact. That means less ducks available for sportsmen and also less ducks to go back up north and produce more birds. Although steel may not be the best answer, it is the only answer that I see that we have now, and that's why I feel we should support the steel shot. Thank you.

CHAIRMAN DOYLE BERRY: Thank you, sir. Mr. Wayne Gallant. Mr. Jake Robson from Lake Charles. Mr. Robert Fontenot. Mr. Robert Green from Lafayette. Mr. Jones. Mr. Tommy Fortier, Mr. Jerry Sanders, Robert Sonnier, Greg Tarver, Jerry DeMary, Tommy Vincent, Mr. Wilson Thibodaux, Baton Rouge.

MR. WILSON THIBODAUX: I am Vice President of the Baton Rouge Sportsmen's Club and they instructed me to tell you that we favor the steel shot. I have hunted with steel shot and my own opinion is that at first I didn't like it because of the prices of it. I didn't like the effectiveness of it but as I learned to make adjustments and let the ducks and geese come in close, I realized it was just about as effective as the lead shot.

Secondly, ladies and gentlemen, we must realize that we have to put away the fat of being greedy and have conservation efforts to save our waterfowl. If the same amount of waterfowl that die from lead poisoning as is hatched in the United States, well, certainly we must do something about it. I think that the prices. A lot of people are complaining about the price of steel shot and eventually through demand it will equalize itself, so I'm not going to make an attempt to make, they will make their own spiel because you know I'm not a speaker but I appreciate the opportunity, Mr. Chairman, Members of the Commission, ladies and gentlemen, to come up before you and express our opinions and certainly hope that the Commission will and I think that they will, make the right decision and I appreciate the studies from the biologists. I think they are very capable and we should be appreciative of their efforts. In closing, I would like to invite every one of you to a goose and duck calling contest in Baton Rouge on Saturday night and I guarantee you we won't have a lead and steel shot controversy. Thank you.

CHAIRMAN DOYLE BERRY: Thank you, Mr. Thibodeaux. Mr. Harry Gunthin, from New Iberia. Mr. Fred Martin, Lake Charles.

MR. FRED MARTIN: I really don't have anything to present to the Commission in the way of credentials other than the fact that I love duck hunting and love ducks. That's what got me to the hearing on this thing and keeps me here tonight. A couple of things trouble me about this meeting. The point is I think

that the problem we are trying to cure, the solution is worse. I have hunted the last two years in areas of southwest Louisiana and Lake Charles and some of them had steel shot and some of them had lead and I shoot steel shot, both steel and lead in my 12 gauge and I can tell you from my experience that they are no where near in comparison in the killing effects on ducks. I think crippling loss from steel shot far exceed any benefit that we are going to have from replacing it with the lead. The other thing that worries me a little bit is the fact that the federal government is going to provide a solution to us. I remember in 1958 was the last year you could kill Canada Geese in Louisiana and they had 20 yrs. to bring that back to us and have not succeeded in that yet. Now they are going to tell us that although they can't enforce this regulation in Washington, they want the States to sign and come down here and make decision and enforce it for them. So I would just like to say that I think people as was mentioned by Dr. Glasgow that maybe this committee ought to be intimidated by the "Friends" that there will be a court suit that may stop all hunting in Louisiana and I certainly hope that you aren't swayed by that argument. I started hunting when I was eight and it has been one of the most beneficial experiences I have had in my life. I brought this to my children and I can tell you right now that if I thought steel shot would help increase and preserve this heritage for my sons and my grandsons, three or five or whatever increase in

the price of it, I'll tell you I don't believe that steel shot is the answer. I think it was proven where the answer to continuing good duck hunting is when the limit went to 2 back in the late 50's and early 60's. There wasn't any talk about it was the lead shot that was killing the ducks, it was the dry prairies in Canada and the breeding grounds and this is where improvement was taking place. It wasn't by switching from lead shot to steel shot and, you know, bringing the ducks from the law points then to where we can now have the limits that we do have. It was in no way caused by switch over to steel shot. I think it's premature to say that this is the answer to lead shot problem and I request this Commission to vote against it.

CHAIRMAN DOYLE BERRY: Thank you. Mr. Jerry DeMary.

MR. JERRY DEMARY: I'm Jerry DeMary from Lake Charles. Area Chairman of the Ducks Unlimited there. I'm Vice President of the Louisiana Wildlife Federation and I have been on the Lake Charles Rod and Gun Club as an office holder for many years. I am very much opposed to steel shot the way it is set up at this time. I readily agree there is a lead poisoning problem but I do not believe it is a problem for our particular part of the state. I don't believe it is a problem . I don't believe that in the marsh areas that we will have the highly concentrated lead problems that we are supposed to have. I know they claim all game. I've never found any lead shot in the gizzards in all the years that I have cleaned them. Now, surely

by this time I would have found at least one whole lead shot. As far as the little wafers that was spoken about earlier, I can agree with that. I could have passed over this quite easily but at some point in time, I should have found at least one or more whole lead shot. Dr. Friend made the statement that the decision is in our hands. I truly hope that the decision is in the hands of the people that came here tonight to speak and I hope this Commission heeds to the people that are speaking on the opposition to the steel shot.

I would like to speak for a second on the Bellrose Report which was mentioned many, many times tonight. While we were trying to change Louisiana to the Central Flyway that the Department of the Interior did not need to listen to anything that the Bellrose report had to say. At this time they want to take note of the Bellrose report. I think they use this report to their own convenience. One final statement, I think if we continue with all the lead that we are supposed to be dumping in these areas, we don't have to worry about losing our lands to the farmers, which I have nothing against the farmers, we have to watch out we don't lose it to lead miners.

CHAIRMAN DOYLE BERRY: Thank you, Jerry. Mr. Donald Promier from Lafayette. Carl Arceneaux, Duson. Russell Mier, Lafayette. Mr. Jerry Deville, Ville Platte. Stein Byron, Lake Charles. Vince Smith, II, Lake Charles. John LeBlanc, Lafayette. Who else would like to be heard tonight? Would you please come up one at a time and give me your names.

MR. MARK SHIRLEY: My name is Mark Shirley. I'm from Baton Rouge.

Mr. Chairman, Members of the Commission, I'm just a concerned sportsman. I don't have the credentials that a lot of these other people have. Now I know some of the other bigwigs get up here and talk about going out in their airboat and hunt their duck. I don't have an airboat. I have 4 pirogues. OK.

I believe the biologists when they got up here and said we have a lead shot problem. I think we cannot disregard the fact. If we can do something to ease this situation, I think we should take that positive action. We should support the steel shot program in Louisiana.

CHAIRMAN DOYLE BERRY: Thank you, sir. Young man, with your hustle, I'm sure you will have an airboat one of these days.

MR. RAND LANTTOP: My name is Rand Lanttop. I'm from Baton Rouge and I'm President of the Louisiana State University Chapter of Wildlife Society. I have a prepared statement that I am going to bore you all with even though you have heard most of this before.

Louisiana State University Chapter of Wildlife Society strongly recommends that Louisiana Department of Wildlife and Fisheries and the Louisiana Wildlife Commission approve and continue to enforce the federal regulations governing the

use of steel shot in certain designated areas of the state. Most of my members hunt ducks and some of them have occasion to use steel shot. We are familiar with the arguments against the use of steel. We agree there are problems not the least for which is the high cost of steel shot. Nevertheless enough evidence has accumulated over the past twenty years to prove beyond a doubt incriminating ingestion of lead shot as being the cause of waterfowl mortality. It's the gross waste of our waterfowl resources through lead shot ingestion and subsequent death and reproductive failures. It is a serious problem in Louisiana and elsewhere. It's a problem that can be solved in part by the use of steel shot in certain classified areas. The greatest solution possibly to the problem, as Dr. Glasgow mentioned, that steel shot be used in all areas of the state. We feel it is the responsibility of the sportsmen to adopt those regulations which best allow for wise use and maintenance of our waterfowl resource. If we continue to fail in the wise use of this resource we may end up losing the right to harvest any of it. Wasting waterfowl from hunter-caused lead poisoning is not a wise use. We find it ironic that some of those hunters annually contribute to the maintenance and development of waterfowl breeding habitat through organizations such as Ducks Unlimited are unwilling to pay the price of steel shot when given the

opportunity to personally participate in a program aimed at decreasing waterfowl lead poisoning losses. If more of our hunters would read your books and get the facts and look at a few gizzards themselves and still be opposed to the use of steel shot as an alternative to lead poisoning, we respectfully submit that they might consider hanging up their shooting irons and leave it to those sportsmen who have rightful concern with preserving our waterfowl for themselves and for future generations. Now, I would like to add one thing to that.

FROM THE FLOOR: Excuse me, sir. Would you please restate your name again.

MR. RAND LANTTOP: Rand Lanttop. L-A-N-T-T-O-P. As I said, I would like to add one thing to that. People don't seem to be aware that the fellow who lives in a third flat of an apartment building in the City of Chicago has as much to say about this waterfowl resource as you and I do. If he doesn't like the seasons, he can do anything to that duck season down at the pond--not the one you and I put out decoys. At a duck camp, he wouldn't let you or I or anyone kill that duck. For us to give him ammunition to fight the battle against our right to hunt waterfowl is not right. By using steel shot at least is a temporary stop gap measure which will prevent that from happening, I think we ought to do it.

Now someone mentioned that a judge from Alexandria will make a decision. Well, it's not going to be from some

judge in Alexandria. It's going to be the Congress of the United States and the Supreme Court and that is part of the problem New York City where there are more people than are here and have as much to say about it as we do. I think we ought to give that deep consideration. Again, we recommend that the Wildlife and Fisheries Commission approve the enforcement of steel shot for this year. Thank you.

CHAIRMAN DOYLE BERRY: Thank you. Next speaker.

MR. TOM BRIER: Mr. Chairman, Members of the Commission, I'm Tom Brier from Baton Rouge now but I'm from New Orleans originally.

First of all, I would like to compliment the opposition to the steel shot. You did your homework a hell of a lot better than I did. The only problem with that is that it is not going to cure the problem of lead shot in certain areas, called "hot spot" areas.

Secondly, the scientific research. The main objective of scientific research is to be unbiased. I know I have a lot of faith in people like this, Bateman and other biologists. He was out in the airboat examining all these sick ducks. We heard people tonight say that they haven't found any lead shot and even one fellow suggested that we feed them lead to prevent Cholera. But our own study got in our own backyard, Catahoula Lake, I think we should take heed to. The anti-

hunting courses. And, finally, as far as ballistics go, steel shot we probably would have to sacrifice some yards. I was taught that, you know, try to get your ducks to come in a little closer than 200 or even 60 yards.

That's all I have to say. I came and I just wanted to say something. Thank you.

CHAIRMAN DOYLE BERRY: Thank you very much.

MR. DWIGHT LEBLANC: My name is Dwight LeBlanc and I am from Scott, Louisiana, and I want to say that I shot steel since 1975 and I noticed no damage to my gun and I think that my shooting has improved. I wait for my ducks now. I heard that steel didn't carry as far so now whenever I sit I wait for my ducks and I think that on a per shot basis my success is better with steel than with lead shot.

Another thing I want to talk about is the cost. I don't think the cost of steel justifies its being eliminated because people who, people who have a lot of money and have hunting leases, things like that, and you know you guys that can afford to have a two-thousand dollar duck camp and I don't think $5.00 more for a box of shells is going to hurt those guys. If you can afford a lease, you can afford $5.00 more for a box of steel.

Another thing, I would like the Commission to stand by the biologists. Those guys have a lot of schooling. Some with Ph.d's. It's 6 yrs. People like you and I and they hunt just

like you and I do. I don't think they like the idea of paying more for steel shot than anybody else does, but because in the interest it is a good idea to use steel shot because of the lead shot problem. They are willing to just about sacrifice their jobs to support steel. This is one thing you should consider.

The implementation of the steel shot program is not an immediate answer to problems in lead shot poisoning because lead is going to persist in the environment for a long time. It supposedly is a lot of lead at the turn of the century is still on the bottom of places like Catahoula Lake and is still poisoning ducks. It is a persistent poisoner.

My final statement is that we can train hunters to use steel shot probably but cannot train the ducks to stop eating lead.

I sincerely hope that the Commission will allow the Fish and Wildlife Service to enforce the steel shot regulations in the State of Louisiana in the "hot spots." If the Commission does see fit not to allow the Fish and Wildlife Service to enforce steel shot regulations on those hot spot areas, I sincerely hope that the Commission will allow the Fish and Wildlife Service to enforce steel shot regulations on federal refuges because we heard a lot about anti-hunting organizations today that were going to go to the court and they will. Public hunting areas, areas that I use, will be lost to the hunter.

It's not a question. It's a fact. I don't have any place else to go so if you do allow lead shot only I sincerely hope that you allow the Fish and Wildlife Service to enforce steel shot regulations on their refuges. Thank you.

CHAIRMAN DOYLE BERRY: Thank you.

MR. KEN TUMMINELLO: My name is Ken Tumminello. I'm from Baton Rouge, Louisiana.

The lead shot problem, the poisoning, is real and is not some figment of the imagination of the biologists that have been investigating this for years. I can see no reason to make this kind of information up. It witnessed lead shot poisoning. I gave examined gizzards and have seen the lead pellets there. I have seen what the biologists from the U. S. Fish and Wildlife Service in the field have described. They are not imaginary. They are real. The biological facts. OK.

The questions is: Is steel shot the answer? Maybe not. Maybe it will be. Maybe it could be. However, we have to take some effort to demonstrate our true concern not for our hunting. Not for this season. Not for our children. To Hell with all that. What about the natural resource. There can and will be and will continue to be loss from lead poisoning. The lead is there and will remain there and can only begin to be alleviated by eliminating lead shot, particularly, in the hot spots.

So, I think we need to do here and as others discussed here tonight. I support the use of steel shot in hot spots. However, I think we need to take all this effort and manpower, discuss it, and convert it into positive fruitful research that will evaluate hot spots, evaluate them as well as our biologists have evaluated the effects of lead poisoning. I believe we need to get out of this business of commercialism, trying to cite a bunch of reports from arms manufacturers. No doubt they are experts. They know what they are talking about. They are ballisticians. Well, let's put some effort into developing an acceptable alternative to lead shot. We have to for the sake of the resource. Thank you.

CHAIRMAN DOYLE BERRY: Thank you, Mr. Tumminello.

MR. DON WILLE: Mr. Tumminello, what is your occupation?

MR. KEN TUMMINELLO: I'm presently employed by the U. S. Fish and Wildlife Service.

MR. DON WILLE: OK. That's what I wanted to find out. Thank you.

CHAIRMAN DOYLE BERRY: Next, please.

MR. BOB STRATER: My name is Bob Strater. I'm from Baton Rouge.

CHAIRMAN DOYLE BERRY: What do you do, Bob. Tell them.

MR. BOB STRATER: I'm a private consultant and also a student at LSU.

MR. DON WILLE: What is your name again?

MR. BOB STRATER: Bob Strater.

MR. DON WILLE: Strater?

MR. BOB STRATER: Yes, sir.

MR. DON WILLE: OK.

MR. BOB STRATER: I don't really know what difference it makes what your occupation is or where you are from.

MR. DON WILLE: I didn't say that. I was just trying to find out something.

MR. BOB STRATER:If you recognize what the person stands for and every person in the state has an equal opportunity to speak.

MR. DON WILLE: Mr. Strater that wasn't the reason. I just wanted to find out exactly what the occupation was of the people who come up here. I was just kind of interested in all persons, sir, the occupations.

MR. BOB STRATER: It seems somewhat strange because, well, you asked quite a few people to speak and didn't ask them what their occupations were.

I don't know that I can add much to what the biologists have already said tonight. I believe they are in a much better position to make decisions than anybody on this Board, panel, or Commission. As a student at LSU, I know. I looked into a lot of gizzards. I looked through a lot of gizzards. The ducks

do ingest lead shot on Catahoula Lake. There is no doubt in my mind about that.

FROM THE FLOOR: I ask you, do you know that they got them on Catahoula Lake?

MR. BOB STRATER: I do not know that they got them on Catahoula Lake but I do know that the ducks were shot by hunters hunting on Catahoula Lake unless they had gotten out and worked through the woods someplace to get them. There was a suggestion earlier for more study. We have heard that there are over a hundred thousand lead pellets on the top portion of the soil per acre on Catahoula Lake. I believe it's over a hundred thousand pellets.

FROM THE FLOOR: What did the report say, Mr. Bateman?

CHAIRMAN DOYLE BERRY: Please, please let the gentleman finish.

MR. BOB STRATER: I'm not finished.

CHAIRMAN DOYLE BERRY: OK, Mr. Strater.

MR. BOB STRATER: We also heard that one third of the mallards harvested up there also had lead pellets in their gizzards this last year. Surveys that I have made on the mallards had more lead pellets in their gizzards. Mallards harvested had lead pellets in their gizzards. Admittedly, the price of steel shot is expensive. The price of steel shot at Gibson's in Jennings last year was $5.79. At the same time, Steinberg's

in Baton Rouge was charging about$9.00. Now I don't know who is making a profit. It was, I suspect, somewhere between the arms manufacturer and the retailer. I hope that you understand our support of mandatory use of steel shot and at least in those areas in Louisiana that the waterfowl biologists designate as "hot spots." Thank you.

CHAIRMAN DOYLE BERRY: Thank you, Mr. Strater. I'm sorry for the interruptions.

MR. BOB STRATER: I just want to clarify one thing. I work part-time for the Fish and Wildlife Service. I work part-time for an environmental consulting firm and currently work on private research on Atchafalaya Delta. I am qualified and I think I know what I am talking about.

CHAIRMAN DOYLE BERRY: Thank you, sir.

MR. HARRY DELCAMBRE: My name is Harry Delcambre. I am from Lafayette and I am a fishing guide at Toledo Bend Lake and also work next two months at a sporting goods store here in Lafayette.

I've sat at this meeting for how many hours now and I'm not in the steel shot zone. I shoot in the lead shot zone. I came here with a lot of questions that I wanted answered and I am leaving here with more questions than I have answers on this whole controversy.

First part of this meeting, I thought it was a political

convention. More politicians up here saying more things and a lot of them not speaking. A lot of them speaking strictly as politicians and a lot of them had a lot of good things to say. I know that after the presentation made by this meeting, I was leaning toward pro-steel shot. Now I realize it was a very one-sided issue on their part. They did not present the entire story and I think a lot of people left here tonight with a lot of questions and I don't think that you can alleviate one problem and bring up another problem and solve the situation. I realize there is a lot of political involved in this committee. Some of it necessary, and some of it very unnecessary. I have a lot of respect for the Wildlife and Fisheries in Louisiana. I am getting less respect for this Board. I don't think it is right to enforce the steel shot on the hunters of Louisiana with the questions that are still at hand. I think you have to be sure that what you are doing is right and half-hearted answers and solutions are not going to solve the problem. That's it.

CHAIRMAN DOYLE BERRY: Thank you, Mr. Delcambre.

MR. KERRY TATUM: Kerry Tatum from Luling (?). As I was listening here tonight to our speakers, except for the fact that there is a lead shot problem, there are three main factors here that everyone seems to be opposed to: the high cost of the steel shot and . . . . (inaudible) and then the crippling effect. If you are going to look at the ducks you are going to say the first two should not even be considered

if you are just talking about the welfare of the ducks which leaves us with the crippling of the ducks which is probably the main factor as to why you wouldnot want the steel shot, certainly better for lead. I can see that you might have to shorten your shooting distances to 30 or 40 yards. I can also see with lead shot you probably would be as I have seen at Catahoula Lake, if you pass 60 yards, you probably are crippling more ducks with lead shot than you would by using steel shot. I feel that right now the crippling effects are now outweighed and the steel shot problem should be inaccurate. That's what I would like for you to consider. Thank you.

CHAIRMAN DOYLE BERRY: Thank you.

MR. HARRY SMITH: I'm Harry Smith, President of the Calcasieu Rod and Gun Club and I actually represent three clubs: The Calcasieu Rod and Gun Club, the Southwest Louisiana Bird Hunters Association, and Southwest Louisiana Sportsmen's League of DeRidder. In all that has been said tonight, there has been talk "pro" and talk "against" steel shot. There are several things or questions that still need to be answered on the steel shot issue. First of all our club is one of the oldest conservation clubs or sports organizations in our state. As a matter of fact, we were the only sportsmen's organization within the State of Louisiana. Our club has been in existence since the early 1940's. We have fought hard. We've done a lot of work. A lot of hard work for conservation. The concensus of

our club, the Southwest Louisiana Bird Hunters and Southwest Louisiana Sportsmen's Association of DeRidder, is that we feel first of all that we would like to ask the committee for a suspension of the use of steel shot in the 1978-79 hunting season as No. 1. No. 2, we would like to have an open moratorium on the use of steel shot during 1979-80 hunting season. We, as an organization, members of the 7th District of the Louisiana Wildlife Federation feel if we need steel shot, if it's brought out that we do definitely need steel shot which I think in my own personal opinion we need more research on it, we will give our total support to the use of steel shot in the needed areas. As far as in areas where it is not needed, we will oppose it in every possible way we can oppose it. I, myself, feel this way that if I am shooting a 12 gauge with steel shot and a gentleman sitting right beside me is shooting a 20 gauge with lead what difference does it make. He is putting basically almost the same amount of lead out that I would be putting out with a 12 gauge.

My personal recommendation and a good number of the people of all three of the organizations feel the same way and that is why there should be a ban to using a 12 gauge. All right, I am the owner of a gun shop. I am a gunsmith. Today you watch the people and you watch the products brought into my shop and you will see the people that two years, three

years, five years ago, were hunting with 12 gauges are no longer doing it. They are coming in and buying skeet barrels for them. They are not hunting game with their 12 gauges. They are hanging them up. I have people calling me up every day saying, "Hey, can you get me a 16 gauge?" Sixteen gauges will be faded out. Next few years it is going to be harder and harder to get a 16 gauge shotgun. It's going to be hard to get ammunition for a 16. What's happening is the only thing that will bring it back, it's 28 gauge now. 20 gauge is the strongest seller gun right now and it's the up and coming problem. Why? Because of steel shot. Sure we have a ban on the 12 gauge. We say you can't hunt here, here or here with a 12 gauge so the man buys the 20. What are we doing? It's like spitting into a 40 mile per hour wind. You get egg in your face. You are not eliminating the problem that is there. You are still going to have the same problem that has been there, it's going to be there, and it is going to stay there. My personal recommendation and a lot of the people of all three organizations have the same recommendation. If we need steel shot let's put it statewide. Let's put it on all gauges. We have enough waterfowl. You are going to have to shoot steel shot. If the biologists say we need it. If the people say we need it, through the reports, through the tests, let's go with the whole thing. Let's not make a farce of it.

Let's don't play childish games and say don't shoot a 12 gauge. You are going to have to shoot steel shot. We have heard both sides of the argument today. We have heard people totally for it. We have heard people talk against it. I've heard people stand up here and say, "Well, thirty million ducks are going to die this next year because of lead poisoning." Yeah, sure. People die on our highways from trucks running over them. There are going to be people murdered. There's going to be all kinds of game kill. What about the game that's being poached right now. We had a problem not long ago in the Calcasieu Parish area of game poaching. These things are going on. We are looking at a specific problem right now but it looks like to me and the way I feel about it and the way the biggest majority of the members of our clubs feel about it. We are evading the issue. If we need steel shot, I'll be one of the first ones to stand up as President of our organization and fight every inch of the way for steel shot. I'm asking the Commission, right here, to stop and think about this problem. If those people hunting, one is using a 12 and one is using a 20 gauge, why should that man shooting a 12 gauge have to use steel shot. It's not right. Now when the arms manufacturers come out with a 16 gauge, when they come out with a 20 gauge steel shot, then my group of people will support steel shot but until that time, I still think we are playing childish games. I think the use of steel shot as it is put on right

now in certain little areas, whether they call it "hot spots" or whether they call it "political spots." No matter what the issue is or where it is put out, I still have to rely on the reports of the biologists. The people that are making these surveys, the people that are supposed to be in the know because I'm a working man. When they go and talk about things like the PCB count in the Calcasieu River, I don't know what they are talking about. I have to rely on other information. Somebody has to explain these things to me. They may be very simple to some people, but not to me. The biological reports that I hear and some of the reports that I heard tonight make a lot of sense.

I wasn't convinced until I saw them dissecting or bisecting the birds up here. I saw them exposing the lead shot. I saw them doing all these things. I also heard people stand up and make the same statement that what we saw up here was a fallacy. It wasn't 100 per cent true. I don't know. I'm a layman.

What I am saying is that we would like to have the steel shot suspension for the upcoming hunting season. We would like to ask for that and then we would like to ask that this whole program be researched in every conceivable way and I'm sure that most of the other organizations would give their total support in any way they could to have this program

researched. To have these things brought out, spelled out, defined but I don't think it's right to hide any of the reports or make statistics up the way you want. If you want a set of statistics, you can make them up, make them read any way you want. I think that if it is all brought out in the open, publicized, made public, everybody knows what everybody else is talking about. Explain the latest terms and I think the whole steel shot issue may be decided easier or there may be less opposition to it if the people can understand it.

That is primarily what our three clubs are in favor of doing. The three points: The suspension of the steel shot this year, an open moratorium and a total research and let's all get back together and talk about it next year with more research and more data. Thank you.

CHAIRMAN DOYLE BERRY: Thank you, Mr. Smith. Next? Anyone else? Yes, sir.

MR. DON EVANS: I'm Don Evans from Shreveport, La. I have an advertising agency. My credentials are I'm a hunter, I have been with Ducks Unlimited for a number of years. I helped organize the original dinner in Shreveport. I trust the merits of Ducks Unlimited. The fact that it has been said many times tonight the pros and cons about steel versus lead shot. I think one thing that we must remember is the beneficiary

which is ducks. There is lead poisoning. There is no doubt about it. That's been proven. However, I think as it has been said earlier. I think we could concentrate our energies and our talent to find the better substitute for lead that we should go along those lines because it has been proven that the steel shot as the cure is worse than the disease because of crippling so I think that we are all interested in preserving the ducks, the waterfowl resource, but I think we need to channel our efforts into finding a better and more concrete substitution for lead where we will maintain this resource and really find something that is acceptable to all the hunters. Thank you.

CHAIRMAN DOYLE BERRY: Thank you, Mr. Evans. Is there anyone else who would like to speak? Yes, sir. I'm prepared to stay until daylight and eat breakfast and come back.

MR. BILL DAY: Gentlemen, I'm going to be very brief because I can't get back to Alexandria until Mr. Luttrell leaves and I have to get up at three o'clock in the morning. I want to say one thing. There has been some disparaging remarks made about the political process in this state. I, for one, would personally like to thank my representatives and my senators who thought enough of their constituents to make a very lengthy and a very long trip down here to represent their people which is precisely what they are doing and precisely what they were elected

to do and precisely what they are paid to do. I would have been grossly disappointed in our legislative delegation had it not appeared here tonight. Most of them did. The others, quite frankly, are in Alexandria right now hoping to elect the new Congressman. It's close to our district. Now if politics is bad, then I suggest that you change the American way of doing things but until such time as ten thousand working people in Central Louisiana can hire buses to come down here and invade this meeting, I suggest that the political processes work quite nicely and, gentlemen, I thank you for the time you have granted me.

CHAIRMAN DOYLE BERRY: Thank you, Mr. Day. I agree with you. Anyone else?

MR. RUSSELL DUCOTE: My name is Russell Ducote and when I saw hundreds of men show up here tonight and how many left earlier as I saw Mr. Wille reading off the names of the people that left, I had the feeling that most of the people here were definitely in favor of keeping lead and were against steel shot. I think that was the foregone conclusion.

I also feel that you are going to alienate many, many sportsmen and hunters who still believe that lead shot is better than steel shot. My question is this. If you alienate all of these hunters and just lose the support that Ducks Unlimited is working so hard to generate, what is going to be the ultimate

effect on the duck population? We are losing, certainly we are losing, 2, 3, 4, maybe 5 percent of ducks due to lead poisoning. If we lose 25 percent of the hunters that are supporting the ducks, supporting the programs that generate more ducks, well, we ought to have more or less ducks. Mr. Yancey, I don't know if there has been any research done on this as far as how much revenue we are going to lose in this state due to hunters not hunting. How many people will discontinue supporting Ducks Unlimited and I think some consideration should be made along these lines. To me, it is just a question of what generates more ducks. It is just like they wanted to conserve energy in this country. The idea was, well, if we just drive 55 miles per hour, we will have more energy. I don't know how many drove up here today but I don't feel that most of you drove 55. The point is you have to have the support of the people for any program that you are going to enforce.

If you enforce the people in this state to take this program and they are personally not in favor of it, they are not going to back up the federal agent over here. He said he had the support of the people. But if you turn people against the program they are not going to support it. You can't. You said yourself you only have 3 agents per parish. What is needed is for the duck hunters to be behind conserving ducks.

If we are losing 5 percent due to lead poisoning, well, that's unfortunate. I would say by having the participation from the duck hunters, I think we will offset that 5 percent loss. If we alienate 25 percent of the hunters, we are going to lose the revenue. We are not going to be able to enforce the programs that we have now. We are going to lose wetland purchases. I believe some consideration ought to be what we would lose if we enforce the steel shot. Not just how many ducks we would actually save the lives of, but it should be the total program.

I had one other thought. I came totally unprepared and it slipped my mind.

CHAIRMAN DOYLE BERRY: You did a good job.

MR. DON WILLE: You are doing a good job. Go right ahead. Think about it.

MR. RUSSELL DUCOTE: I think that's about it. I just wished the Commission could give some consideration to the total picture of less than 3 percent of the number of ducks that we have. I think that if you lose the support of the people you are going to lose a lot more than just 5 percent of the ducks.

CHAIRMAN DOYLE BERRY: That's a good point.

MR. RUSSELL DUCOTE: Thank you, sir.

MR. SONNIER: Mr. Chairman, in answer to the rebuttal

I have some in reference to people that have spoken in support of steel shot and in support of the biologists in particular. As I see it, maybe I'm wrong, the biologists play a supportive role. No matter what his recommendations are the will of the people is what it is all about. I think unquestionably the idea here tonight was that the sportsmen do not want the steel shot and we should go by the will of the people rather than the biologist. With all due respect to the biologists here tonight. Thank you.

MR. RUSSELL DUCOTE: If we are losing 5 percent to lead poisoning and the present duck limit is 10, as a compromise would it make any sense to say reduce the limit from 10 ducks to 9 ducks and increase to 10 percent saving on ducks rather than 5 percent. I think this would be a good answer to the other states as far as Louisiana's position on the issue. I don't think the fact that Louisiana would be the only one state, see, who refuses to use steel shot. I think that would set us up. We would be saving ducks ourselves. We would look bad in places of the Nation so to speak but if we could tell the conservationists, this man here, people throughout the rest of the Nation, that we in Louisiana are not certain as to the effects of lead poisoning and the effect of the use of steel shot.

What we would like to do is reduce our limit by one

duck, or 10 percent, and give the matter more study. I think most of the men here tonight would say, well, look, I'll take 9 ducks as my limit and increase the population by 10 percent due to our shooting. Certainly, the conservationists should not look us down in Louisiana for that position and it seems to me a compromixe that might make sense and make your decision a little bit easier. Thank you.

CHAIRMAN DOYLE BERRY: Thank you, Mr. Ducote. The Chair would like to see a show of hands in this audience tonight who agree with Mr. Ducote's proposition here to reduce the bag limit by one. Reduce by 10 percent the amount of ducks killed.

Is there anyone else?

MR. BOB SMITH: I could go on for quite a while but I'm just going to pick out one or two points about the issue.

I'm Bob Smith, U. S. Fish and Wildlife Service.

One point here about the credentials of the creditability of Tom Roster which is an issue here. I'm not sure in what way but the fact that he has a degree in journalism, I believe, was being held against him. I don't know what that is all about but I happened to spend a day with Roster and all of the ballistics experts at Remington. We spent almost a whole day there discussing these matters. I was very impressed with their reaction to him and the fact that they were most

interested in what he had to say. They agreed with almost everything he said. In fact, they agreed with everything he said. What had been happening to Remington Arms was very similar to what he was describing on his experience at Tully Lake. So there are some ballistics people who respect his judgement and because I witnessed it. Frankly, I don't care what he is if he has answers to the questions I am interested in. I believe that same person referred to Kysicky and Madson on that crippling loss estimate for back about 1973-4. Kysicky and Madson are not ballistics experts and that estimate was acknowledged to be incorrect by them. Not published as that estimate was made but later in small groups they acknowledged that estimate was in error. It is sort of interesting that they never published the error.

Regarding the Sanderson-Irwin report, that has a very long story that goes with it. I'll try to be very brief about it. That test was designed to determine the type of mixture shot that would be acceptable as a non-toxic shot. It involved a testing of mixtures of lead and steel and there were mixtures from like 40 per cent lead, 50 per cent lead, 60 percent lead. One of the tests was conducted on a pheasant pen. As I understand it, a pen that used for pheasants and ducks for many years. The soils of that pen were very high in organic acids from the feed that has been fed to these birds and excretion of these birds in that pen over many years.

We discussed at some length in the final environmental impact statement which was published in January 1976 the fact that various diets have a tremendous influence on the amount of lead that is being absorbed into the blood and tissues and the effect of the lead on the mortality. We cited some examples of feeding Purina Chow to ducks and they survived lead dosing. It has been known and discussed at some length in 1959. There are diets which protect birds from lead poisoning. This is no secret.

The soils in this pen which were high in organic acids protected the birds in one test and in effect it invalidated the test because we were trying to determine whether 40 percent lead was more toxic than 50 percent lead and 60 percent, so the test had to be conducted over again.

The fact that ducks were dosed with lead in the experiment and survived is an interesting observation. We learned something from it. We learn something every time we do an experiment but it had very little to do with the decision or wouldn't have had anything to do with the decision in any respect because similar tests have been conducted in other situations on other diets. It was nothing magic about soil in general because ducks had been tested on soils. It was not the first dosing experiment ever conducted on soils in spite of what was said here. Soils are not magic, they die

whether they are on soil or on wire. So, I don't know exactly what you would do on that. The report was submitted to us about 10 months after we published the final environmental impact statement on steel shot, but if we had gotten it before, I'm still not sure that it would have any bearing because the decisions about lead poisoning are based on dosing of wild birds. What happens to wild birds is not based on hundreds of experiments on wire that have been conducted over the last twenty years. I have to make one point on the film where Dr. Kerr cuts out a lead pellet and then says this bird had lead poisoning. That was a series that took about two and a half minutes and I am totally responsible for the first two minutes being cut out of the film because there was not time for it but he identified five or six things on that bird that indicated that it had lead poisoning but the editors cut all of it out except the last segments which you saw and that was my fault and I apologize.

MR. DON WILLE: Mr. Smith, I would just like to ask you one question and I am certainly not trying to embarrass you or anything up here but I have been to Washington on a couple of occasions with this Commission and met with Mr. Greenwalt. It was my understanding at that time that the Bellrose report was totally unacceptable to you folks up there. Unless my memory

doesn't serve me correctly, and now all of a sudden it's acceptable. Does this mean that you people are really conceiving that we are in fact in the Central Flyway?

MR. BOB SMITH: I'm talking about the Sanderson-Irwin report now.

MR. DON WILLE: You made a reference to the Bellrose report.

MR. BOB SMITH: The Bellrose lead poisoning report which was published in 1959.

MR. DON WILLE: Yes, sir, but the Bellrose report had never been accepted by the U. S. Fish and Wildlife Service. When we went up there they told us it was totally unacceptable and now all of a sudden, it is acceptable. Is that right?

MR. BOB SMITH: I don't even know what you are talking about. I have no idea what you are talking about because I am talking about a lead poisoning report by Bellrose.

MR. DON WILLE: Uh huh. OK.

CHAIRMAN DOYLE BERRY: Thank you, Mr. Smith.

MR. BOB SMITH: All right.

CHAIRMAN DOYLE BERRY: If you have anything else to say, come on back. I'm sorry.

MR. BOB SMITH: I would like for Dr. Friend to comment on the report from Saskatchewan, if we could have about a

minute to do that.

CHAIRMAN DOYLE BERRY: Yes, sir.

DR. MILTON FRIEND: I'm Milton Friend, U. S. Fish and Wildlife Service. I sure hope nobody leaves here thinking that the cure for avian cholera is lead poisoning.

That investigator in Saskatchewan is a very good personal friend. I discussed the design of that study at the time it was being set up for a graduate student who ran it. The study as it is designed and as it was run. It is not a test. It's a situation I described in the field.

The situation I described in the field and the concern that we have goes back into the literature of many types of other studies done on other animals which show in your suspection of lead-poisoned animals including man. If any of you ever had a herpes sore, probably the best way I can explain it to you. That sore appears on your lip and it goes away. When it goes away you have become a carrier of that virus. Now when you are a carrier with that particular virus, we cannot detect it in you. No way. We could test you from now to tomorrow and forever. Now something happens to you to stress it in some manner: physiological, various types of conditions. All of a sudden, the sore reappears. You now make a transition from a carrier to a shedder. As a shedder, you are capable of infecting others and that's what we are

concerned about in the field. When you take a bird that is a carrier of avian cholera and you stress it by debilitating it with something such as lead and it starts to shed the organisms into the environment and infect other susceptibles. All you need to do is break that one shedder, that's all, and you have a problem. That's what we saw in South Dakota. Twenty-five hundred snow geese bit the dust because of that. It is a totally different situation that was tested in the experiment in Canada. They did not have carrier birds. It looked strictly at the susceptibility of the . . . laying on top of one another. I have done many studies with many agents, viruses, bacteria, various pesticides and they all give confirmation of the results with the same agents. The same kind of birds depending on the whim of the experimental situations that are set up. The two situations are totally different. They are not analogous and one study does not refute the other. They both treat other situations. Thank you.

CHAIRMAN DOYLE BERRY: Thank you, Dr. Friend. Anyone else?

FROM THE FLOOR (Mr. Day): Has this avian cholera or botulism or viral enteritis ever been a problem on Catahoula Lake? If so, we have never heard of it.

CHAIRMAN DOYLE BERRY: Mr. Day, I wouldn't know. Mr. Yancey might know that.

MR. RICHARD YANCEY: I'm not aware of any disease problem other than from lead poisoning on Catahoula Lake.

CHAIRMAN DOYLE BERRY: Yes, sir.

MR. SCOTT MCNAMARA: My name is Scott McNamara and I live here in Lafayette. My occupation is in education. My profession is in ecology. I also received a degree from (?) School and I give you this for what it is worth. This is a short statement here. The main issue I see here is species survival. By survival I'm not leading to extinction but to maximum sustainable yield. I put to the Commission a task of being the protector and the voice of wildlife. I see steel shot as one avenue by which we may bypass lead poisoning which is shortening life spans and numbers. Thank you.

CHAIRMAN DOYLE BERRY: Thank you, sir. Anyone else? Is there anyone else who wishes to make any comments?

MR. TOM ROSTER: I would just like to clarify one point. I assume my background is known to the Commission because I was invited here to speak and I didn't want to bore the audience with my background. As far as ballistics is concerned, there is no such degree as a degree in ballastics and no ballastician has a degree in ballastics. For example, Mr. Baxter, who was quoted as a source of reputation for my material is a chemical

engineer. So, those that come into the world of ballastics, like myself, have done research in that area for Oregon Institute of technology for six years. We often come into it with a disparity and diversion of backgrounds. I am not a ballastician in the sense that an arms company means a ballastician as someone who works actively in a ballastics laboratory for an arms company.

As a professor, I worked as an independent person in ballastics research and did ballastics conculting for numerous companies and individuals for a period of time. The only other point I want to make is the gentleman, I believe Judge Lee, made several references to my article and rather than bore you with details I would just like to say that there is not one statement he made concerning my article was either accurate or correct. In each and every case he made a false statement or drew a false conclusion about what I did or did not say in that particular case. Thank you.

CHAIRMAN DOYLE BERRY: Judge Lee.

JUDGE LEE: I beg to differ with you Mr. Roster because I read directly from your article. I don't make it a habit of coming before this august body or any other body and make false statements. I took your article as it is written and I have it right here and I read from it. In fact, I furnished some of the Commission Members copies of it and I read

directly from your ballastics report that was contained therein and I read directly from the report of the article that you published in DU. I did not misstate, misquote, or misrepresent what you had in that article. You wrote it; you live with it.

I did not lie nor did I insinuate anything. I read cold, hard simple facts and I regret that you had to make a statement that you just made. I hoped that it wouldn't get to that.

CHAIRMAN DOYLE BERRY: Gentlemen, I'm going to shut the meeting down before we get into a name calling contest. (Meeting adjourned)

* * * * *

I do hereby certify that the above and foregoing (146 pages) is a true and correct transcription of the tape recording of the proceedings herein transcribed by me.

Janet D. Sommers

Janet D. Sommers, Administrative Secretary
La. Dept. of Wildlife and Fisheries